Supplementary results for the ECCV'14 paper "Predicting Actions from Static Scenes"

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Paper link: `http://www.di.ens.fr/willow/pdfscurrent/Vu14eccv.pdf`

Detailed Results for Visual Action Prediction

In this document, we illustrate additional qualitative results for visual action prediction in SUN-Action dataset as described in Section 5 of the ECCV'14 paper. We show results for all 38 considered action classes. For each action class C we show Precision-Recall and ROC curves corresponding to our best action predictor ("HOG BoW+ HOG FV+ CSIFT FV", see Section 5.2). For each class we also show image examples sorted by the decreasing score of the classifier. The three groups of examples for each action illustrate high-scoring positives (easy positive examples), low-scoring positives (difficult positive examples) and high-scoring negatives (difficult negative examples).

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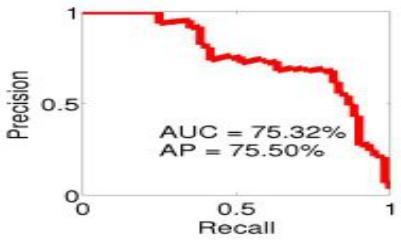
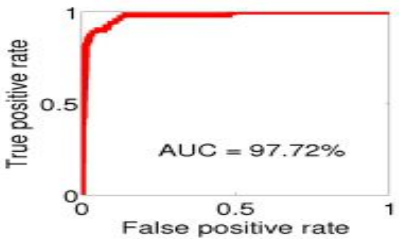
1 ski

Precision-Recall curve



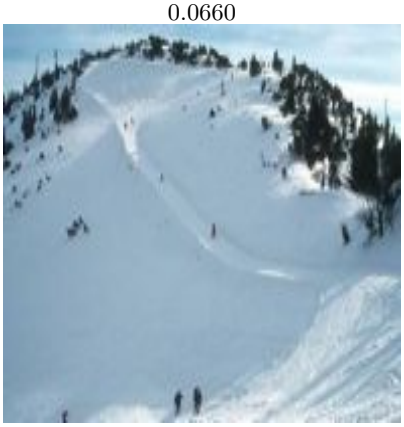
ROC curve



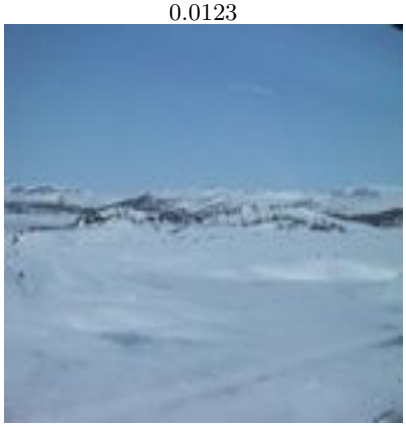
[ski] - High-scored Positives

0.3262

0.0660



0.0123



-0.0096

-0.0784

-0.1067

-0.1694

-0.1831

-0.2075

[ski]- Low-scored Positives

-1.0313

-0.8533

-0.8442

-0.8166

-0.8019

-0.8015

-0.7363

-0.7068

-0.6876

[ski]- High-scored Negative

-0.2981

-0.3946

-0.4224

-0.4248

-0.4455

-0.4543

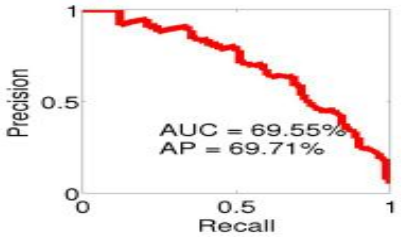
-0.4593

-0.4619

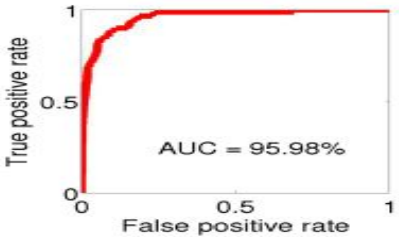
-0.4641

2 pray

Precision-Recall curve



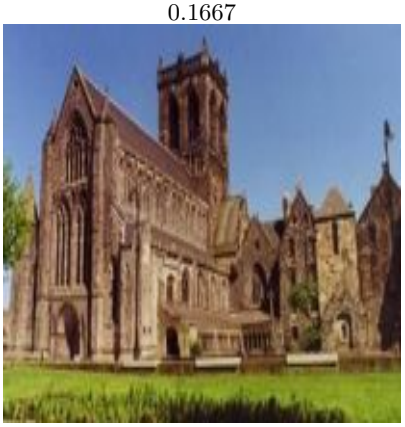
ROC curve



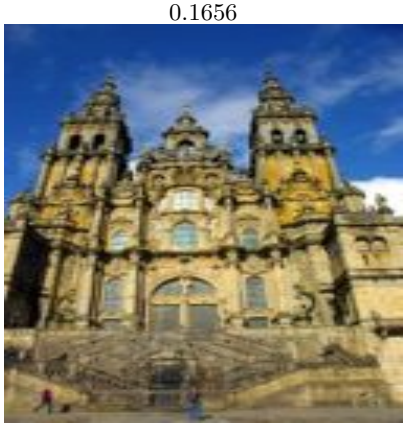
[pray] - High-scored Positives

0.1685

0.1667



0.1656



0.1562

0.1522

0.1309

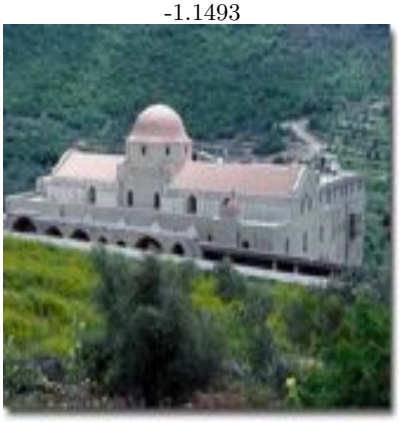
0.1008

0.0737

0.0641

[pray]- Low-scored Positives

-1.1493



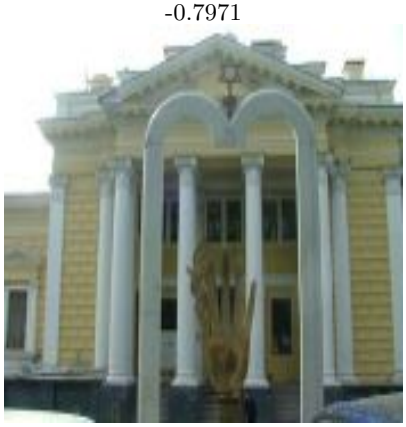
-0.8692

-0.8587

-0.8213

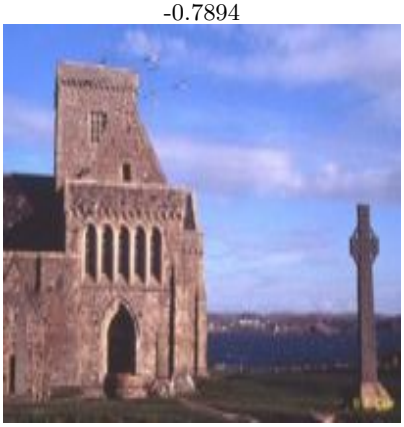
-0.8136

-0.7971



-0.7910

-0.7894



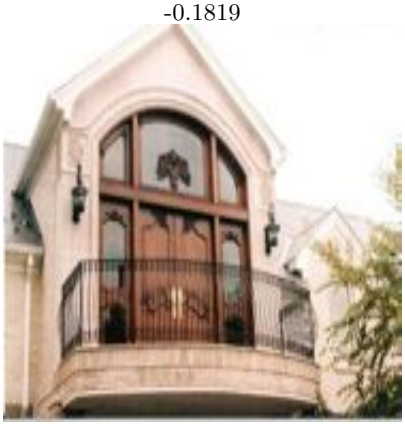
-0.7865

[pray] - High-scored Negative

0.0157

-0.1405

-0.1819



-0.2352

-0.2487

-0.2522

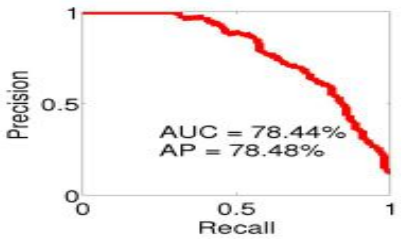
-0.2834

-0.3095

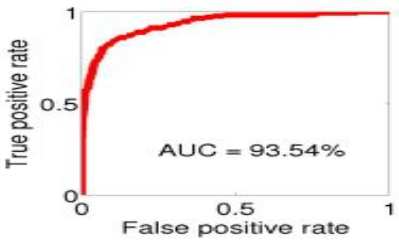
-0.3105

3 swim

Precision-Recall curve



ROC curve

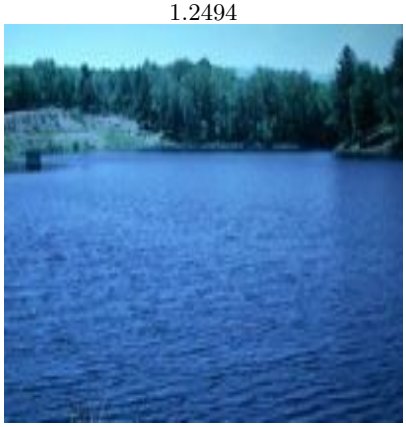


[swim] - High-scored Positives

1.3709

1.2870

1.2494



1.1004

1.0965

1.0245

1.0186

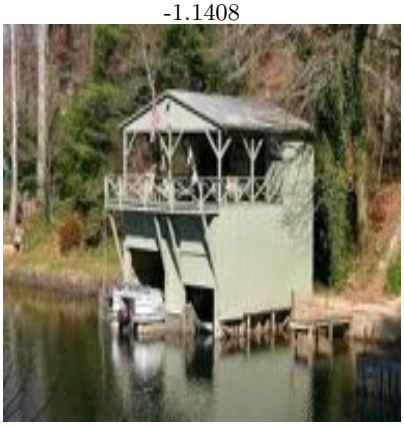
0.8598

0.7535

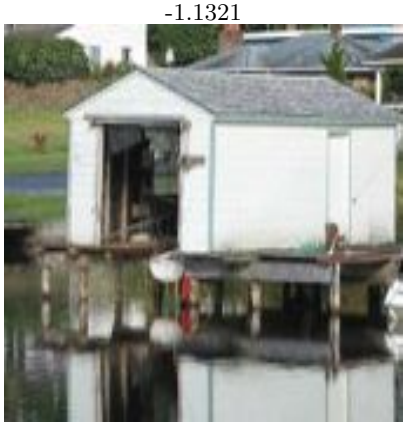
[swim] - Low-scored Positives

-1.2693

-1.1408



-1.1321



-0.9206

-0.8974

-0.8817

-0.8466

-0.8461

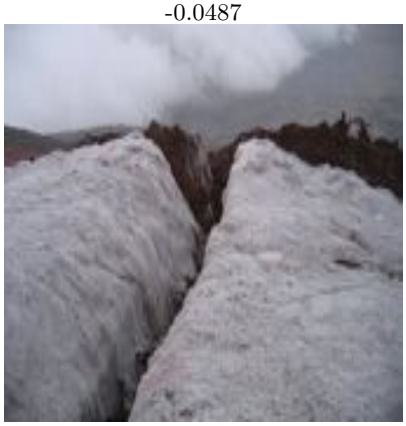
-0.8458

[swim] - High-scored Negative

0.0378

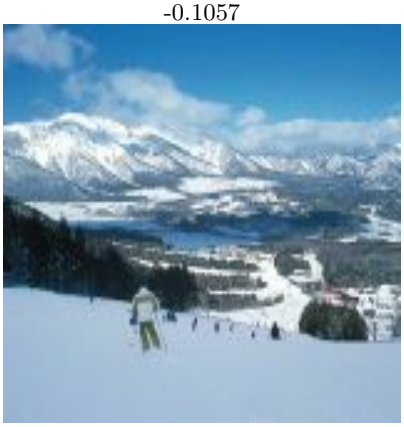
0.0218

-0.0487

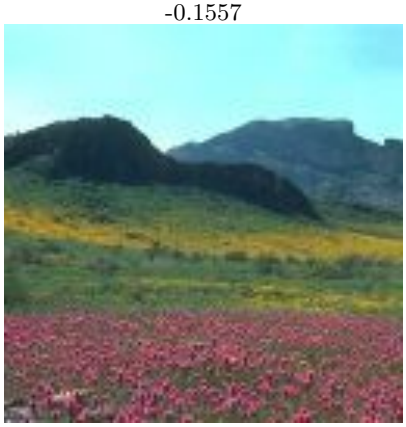


-0.0945

-0.1057



-0.1557



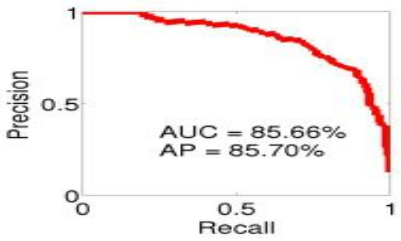
-0.1607

-0.1678

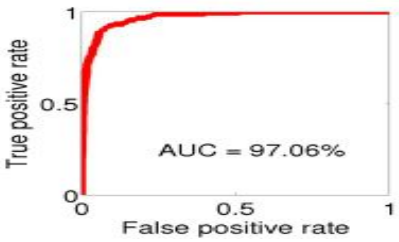
-0.1783

4 hike

Precision-Recall curve



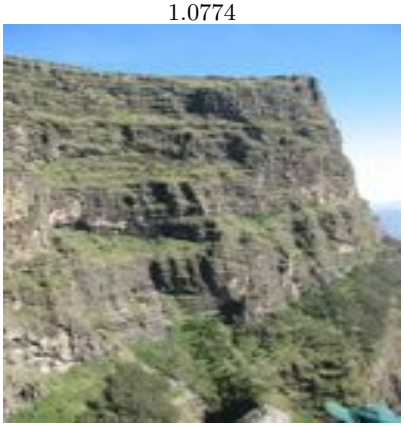
ROC curve



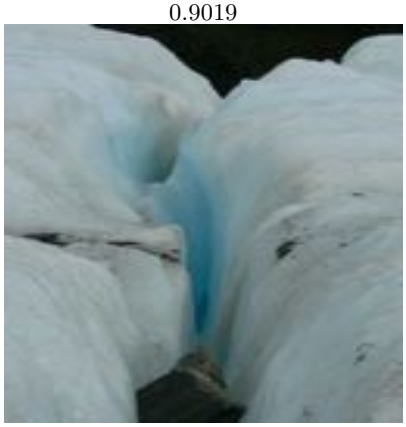
[hike] - High-scored Positives

1.2485

1.0774



0.9019



0.8038

0.7882

0.7681

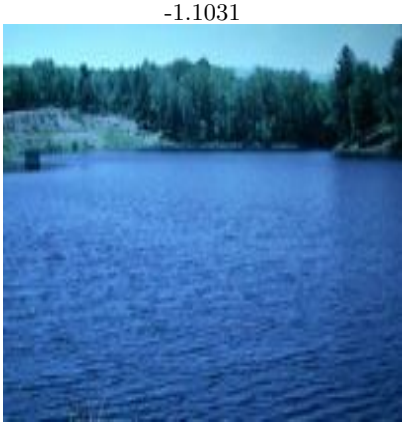
0.7567

0.7120

0.7096

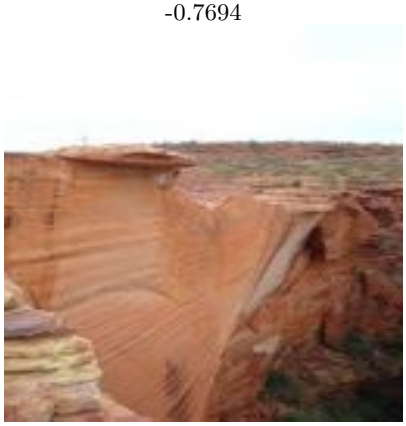
[hike] - Low-scored Positives

-1.1031

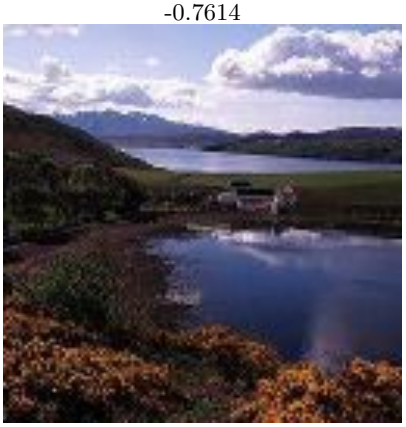


-0.9873

-0.7694



-0.7614



-0.7483

-0.7197

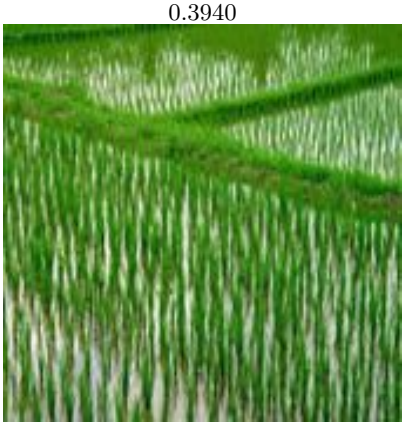
-0.6726

-0.6659

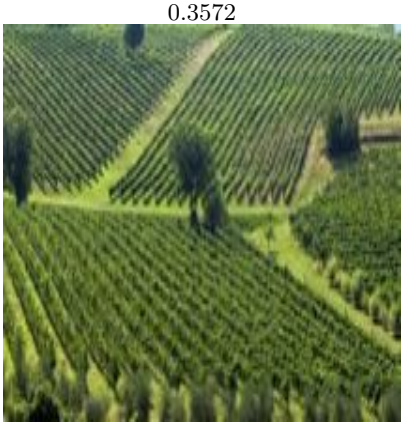
-0.6209

[hike] - High-scored Negative

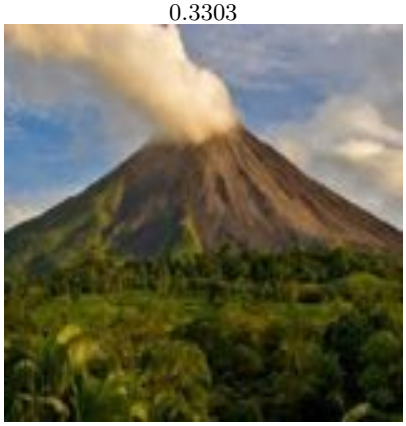
0.3940



0.3572



0.3303

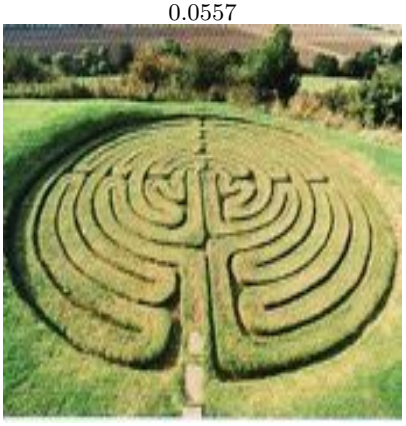


0.2097

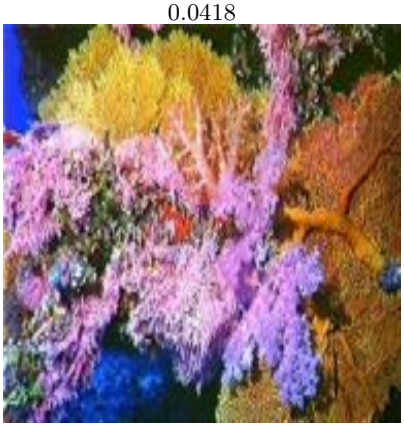
0.1642

0.1474

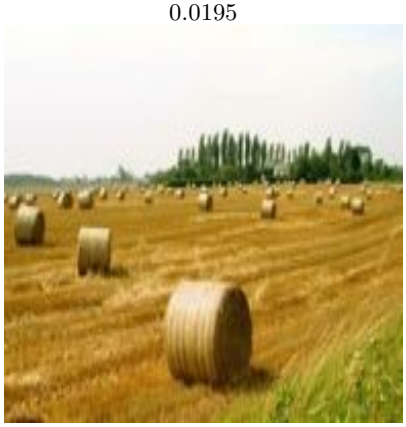
0.0557



0.0418

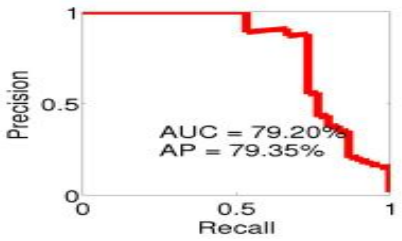


0.0195

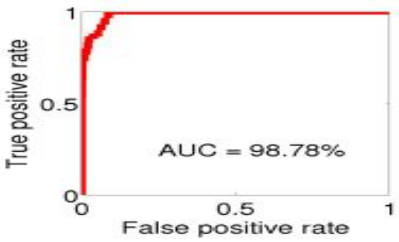


5 play baseball

Precision-Recall curve



ROC curve



[play baseball] - High-scored Positives

0.4521

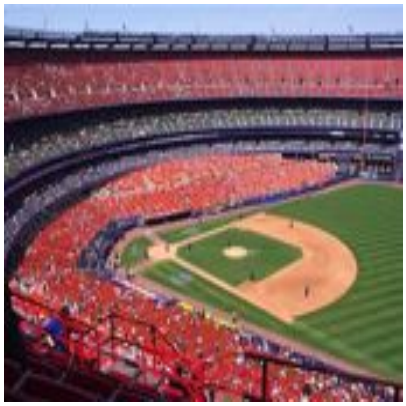
0.0232

-0.0423

-0.1752

-0.1777

-0.1908



-0.2002

-0.2059

-0.2279

[play baseball] - Low-scored Positives

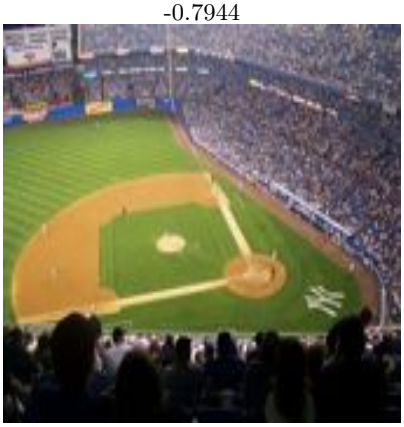
-0.9022

-0.8915

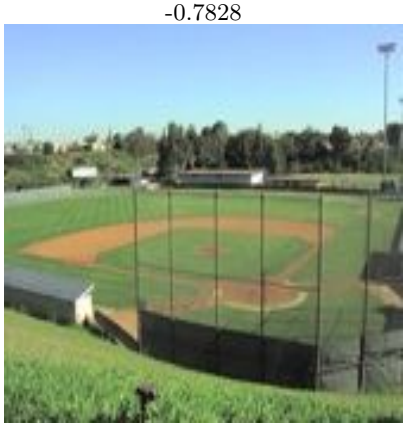
-0.8771

-0.8580

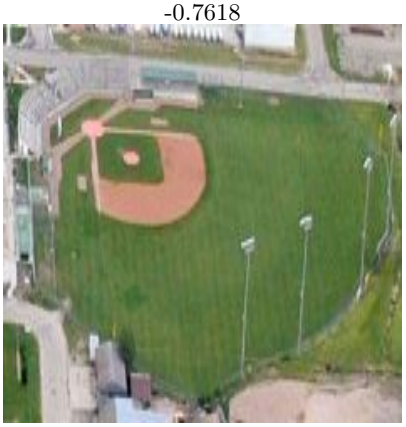
-0.7944



-0.7828



-0.7618



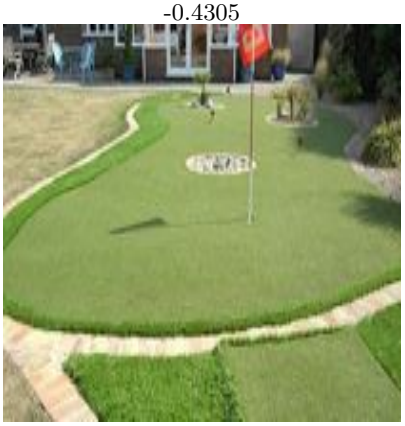
-0.7133

-0.5728

[play baseball] - High-scored Negative

-0.4302

-0.4305



-0.5016

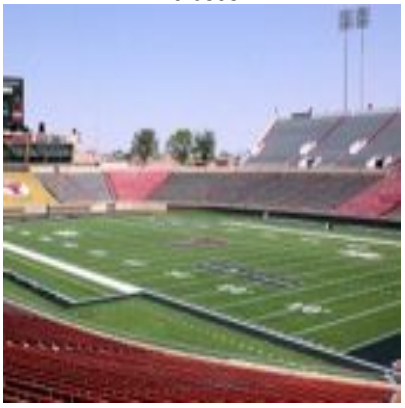
-0.5770

-0.6036

-0.6062

-0.6174

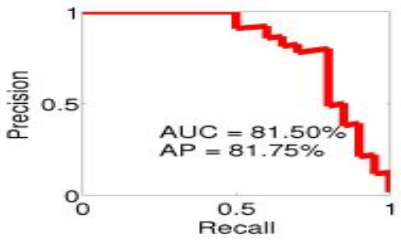
-0.6303



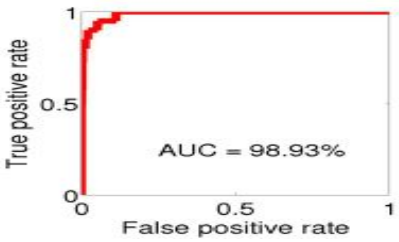
-0.6422

6 run

Precision-Recall curve



ROC curve



[run] - High-scored Positives

0.1786

0.1761

0.1475

0.0979

0.0324

0.0018

-0.0670

-0.1627

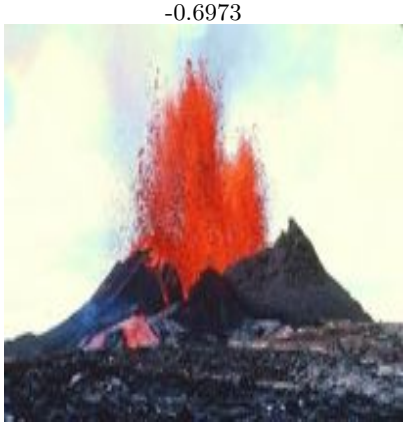
-0.2181

[run] - Low-scored Positives

-0.8589

-0.7746

-0.6973



-0.6568

-0.4960

-0.4918

-0.4426

-0.4071

-0.3911

[run] - High-scored Negative

-0.3063

-0.4015

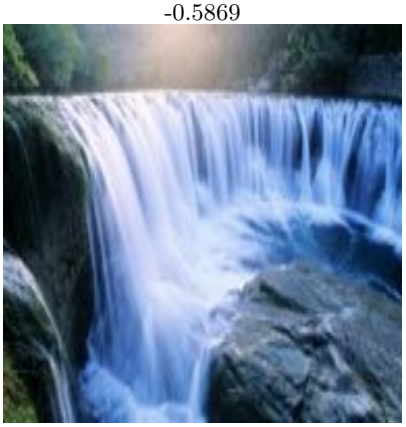
-0.4379

-0.4903

-0.5144

-0.5436

-0.5869

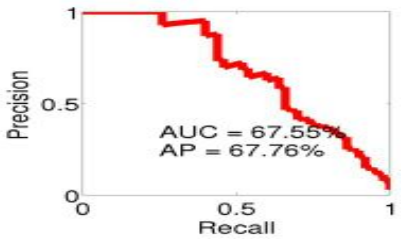


-0.5910

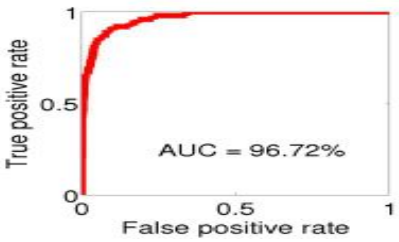
-0.6039

7 farm

Precision-Recall curve



ROC curve



[farm] - High-scored Positives

0.6036

0.4815

0.3718

0.3685

0.2630

0.2521

0.1698

0.0933

-0.0808

[farm] - Low-scored Positives

-0.9695

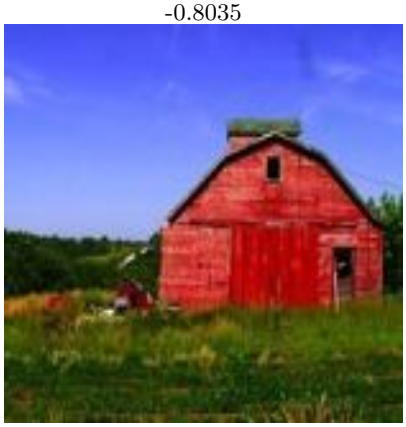
-0.9251

-0.8961

-0.8757

-0.8291

-0.8035



-0.7942

-0.7597

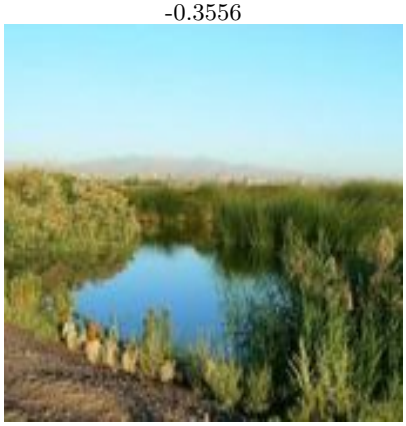
-0.7554

[farm] - High-scored Negative

-0.1733

-0.3501

-0.3556



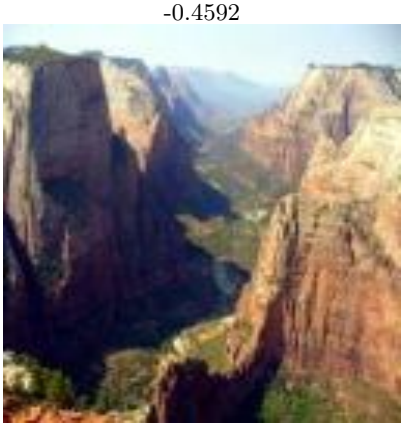
-0.3847

-0.3948

-0.4279

-0.4347

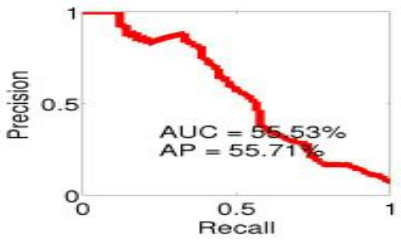
-0.4592



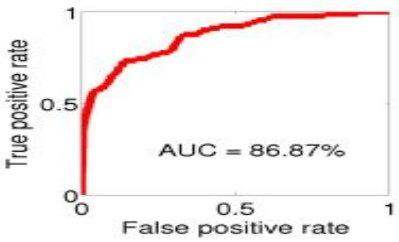
-0.4722

8 drive

Precision-Recall curve



ROC curve



[drive] - High-scored Positives

0.3680

0.1881

0.1803

0.1320

0.1124

0.0442

-0.0055

-0.0669

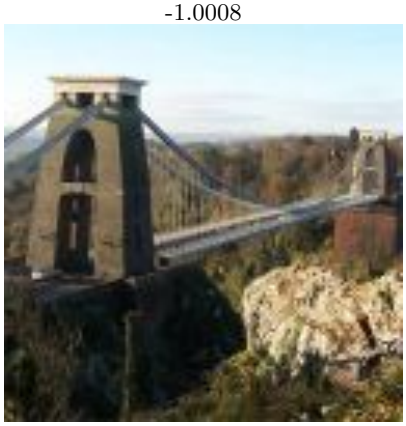
-0.1016

[drive] - Low-scored Positives

-1.1556

-1.0798

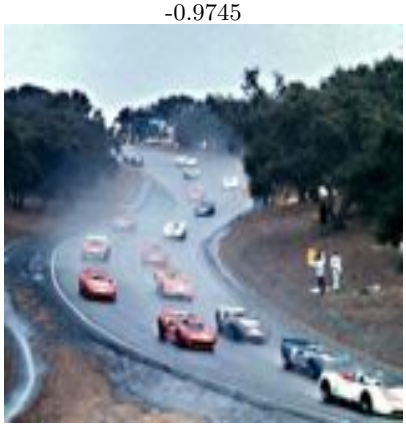
-1.0008



-0.9949

-0.9832

-0.9745



-0.9625

-0.9251

-0.9112

[drive] - High-scored Negative

-0.1873

-0.2507

-0.2913

-0.3069

-0.3682

-0.3686

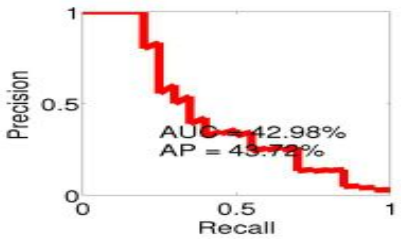
-0.3861

-0.4001

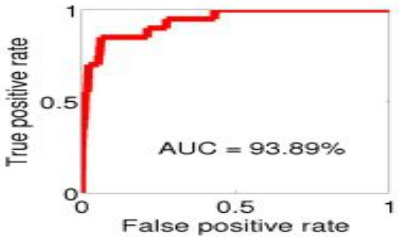
-0.4095

9 have a picnic

Precision-Recall curve



ROC curve



[have a picnic] - High-scored Positives

-0.5861

-0.6043

-0.6095

-0.6227

-0.6601

-0.6839

-0.6980

-0.7339

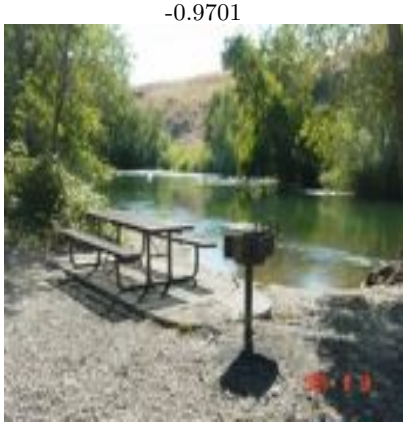
-0.7653

[have a picnic] - Low-scored Positives

-1.0445

-0.9941

-0.9701



-0.8799

-0.8723

-0.8691

-0.8266

-0.8206

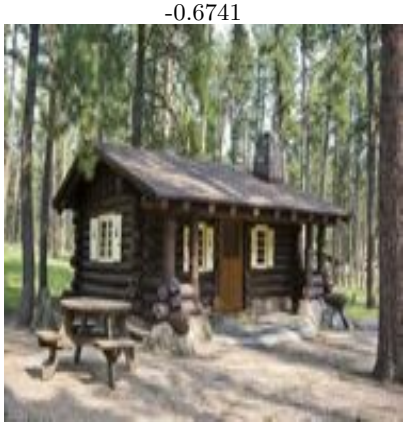
-0.8180

[have a picnic] - High-scored Negative

-0.6259

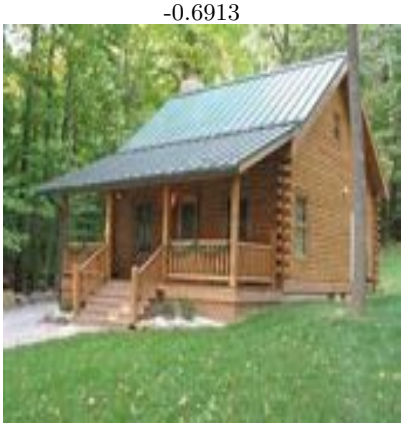
-0.6690

-0.6741



-0.6837

-0.6913



-0.6941

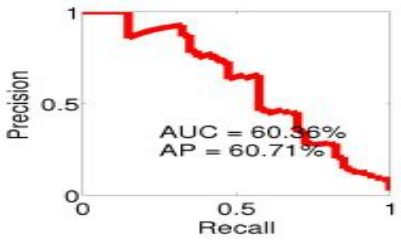
-0.7030

-0.7063

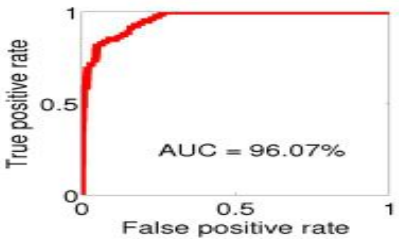
-0.7169

10 park

Precision-Recall curve



ROC curve



[park] - High-scored Positives

0.0367

-0.1837

-0.2421

-0.2515

-0.2858

-0.4279

-0.4497

-0.4647

-0.4985

[park] - Low-scored Positives

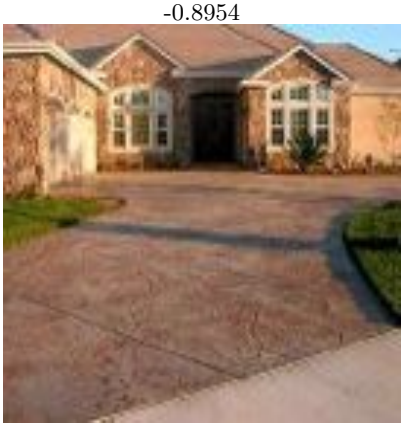
-0.9552

-0.9411

-0.9196

-0.9040

-0.8954



-0.8730

-0.8303

-0.7970

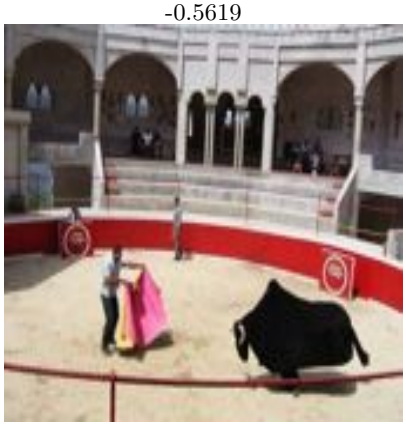
-0.7912

[park] - High-scored Negative

-0.4453

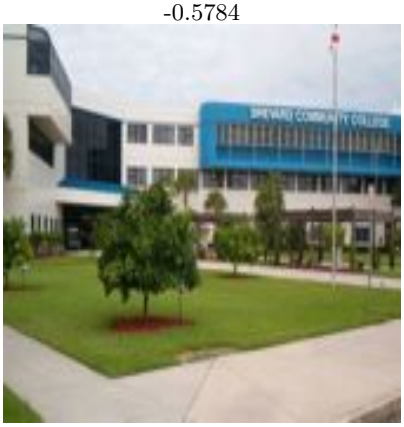
-0.5466

-0.5619



-0.5664

-0.5784



-0.5983

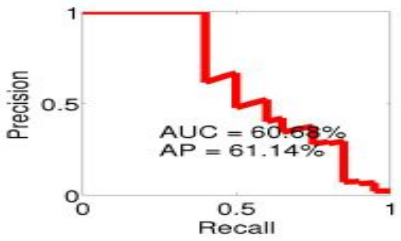
-0.6087

-0.6271

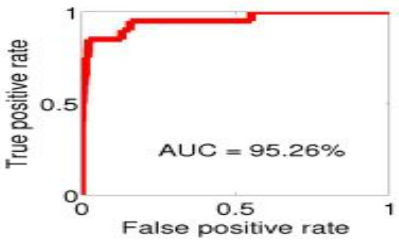
-0.6301

11 open door

Precision-Recall curve

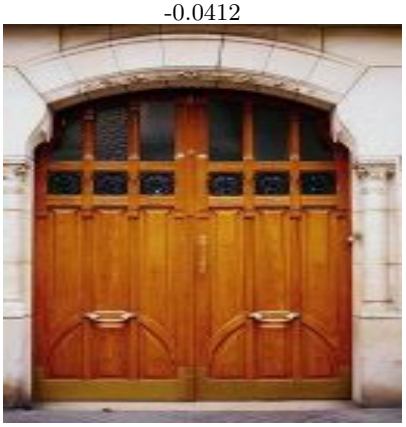


ROC curve



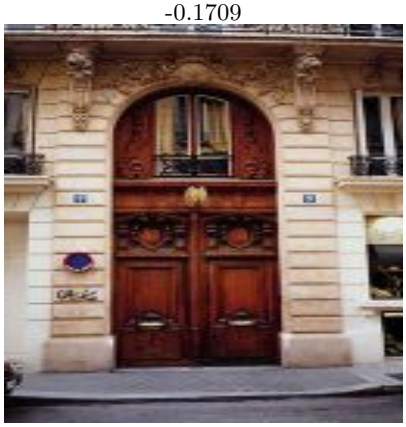
[open door] - High-scored Positives

-0.0412



-0.1229

-0.1709



-0.2151

-0.3142

-0.3680

-0.3836

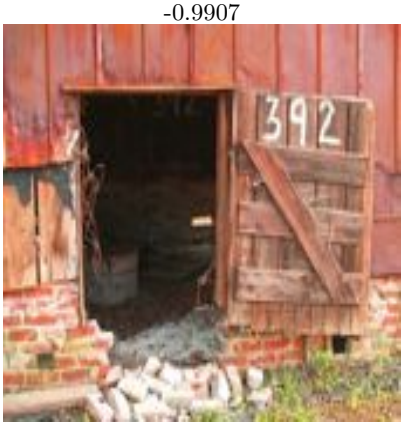
-0.4521

-0.5715

[open door] - Low-scored Positives

-1.1206

-0.9907



-0.9720

-0.8006

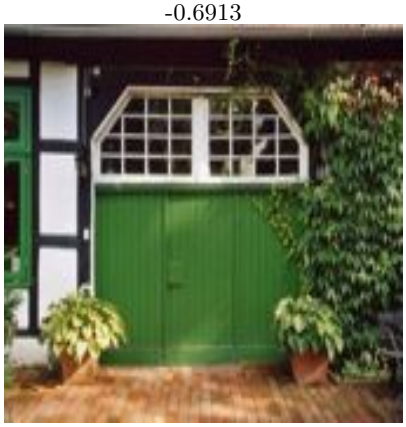
-0.7880

-0.7527

-0.7467

-0.7155

-0.6913

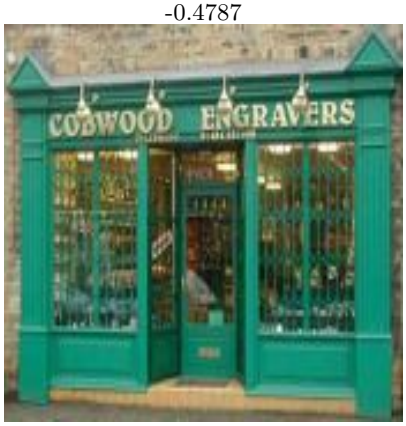


[open door] - High-scored Negative

-0.4577

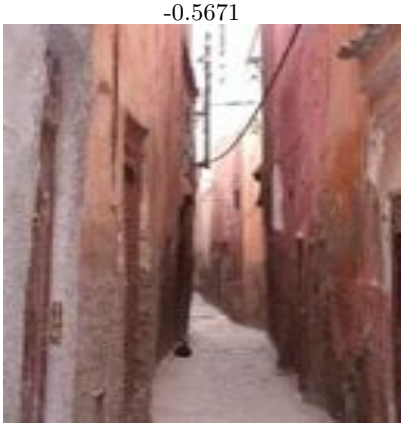
-0.4647

-0.4787

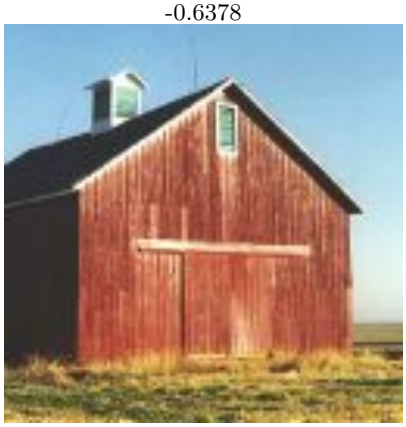


-0.5620

-0.5671



-0.6378



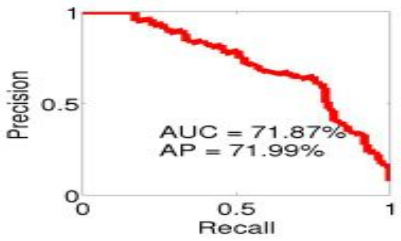
-0.6493

-0.6544

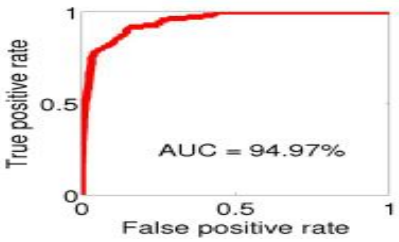
-0.6735

12 climb

Precision-Recall curve



ROC curve



[climb] - High-scored Positives

0.9910

0.7650

0.6552

0.4691

0.3955

0.3527

0.2904

0.2700

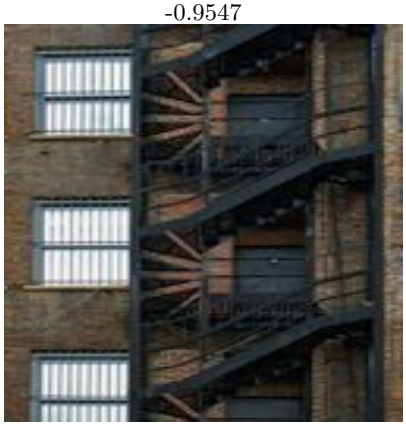
0.2148

[climb] - Low-scored Positives

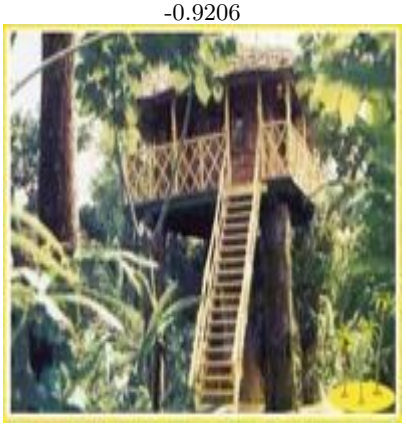
-0.9872

-0.9811

-0.9547

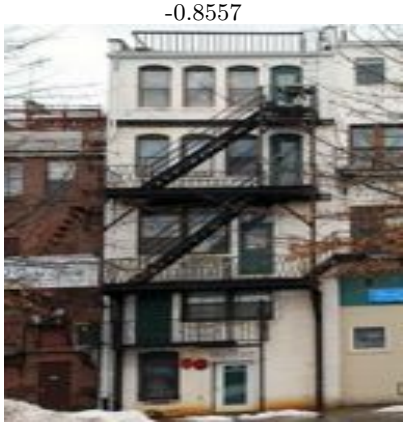


-0.9206



-0.8726

-0.8557



-0.8548

-0.8546

-0.7997

[climb] - High-scored Negative

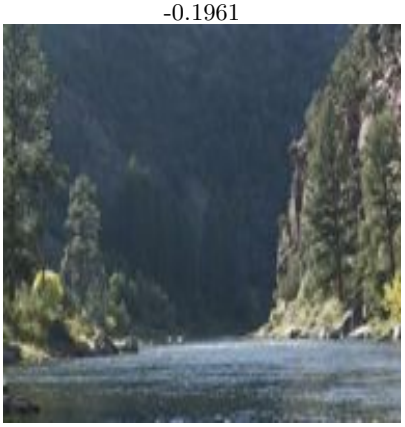
-0.0415

-0.0955

-0.1271

-0.1373

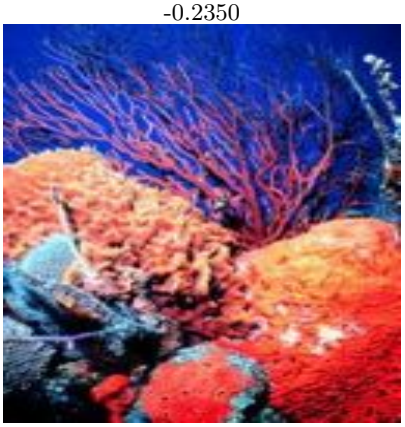
-0.1961



-0.2005

-0.2089

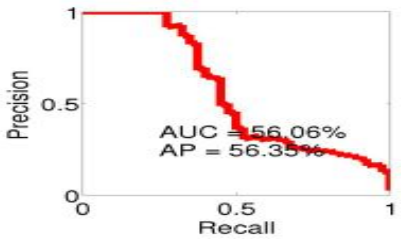
-0.2350



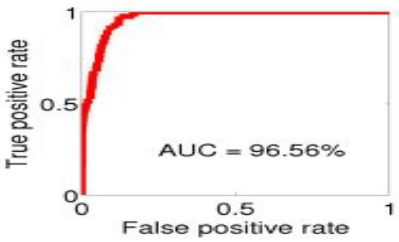
-0.2714

13 go fishing

Precision-Recall curve

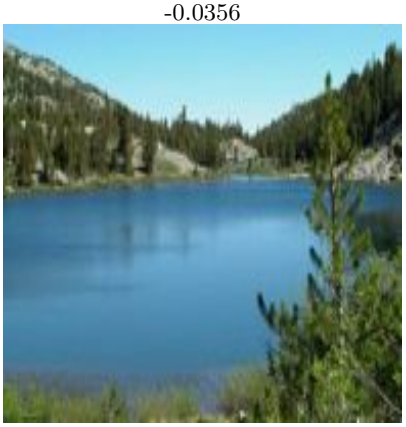


ROC curve



[go fishing] - High-scored Positives

-0.0356



-0.0652

-0.1780

-0.2234

-0.2280

-0.2715

-0.3742

-0.4145

-0.4616

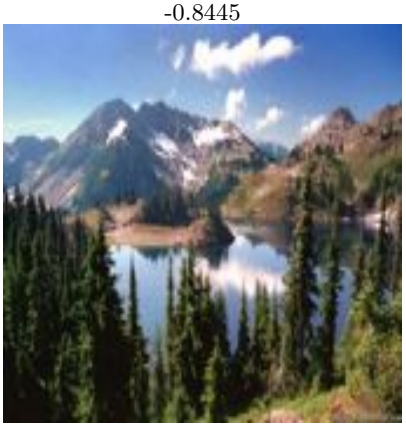
[go fishing] - Low-scored Positives

-0.9166

-0.8735

-0.8722

-0.8445

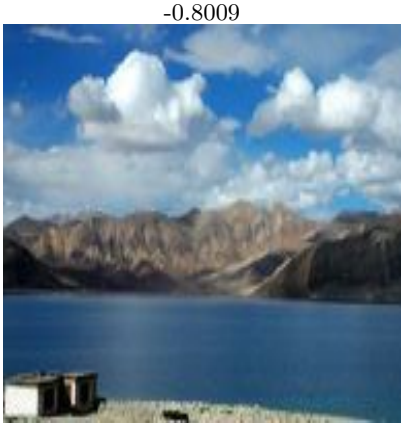


-0.8318

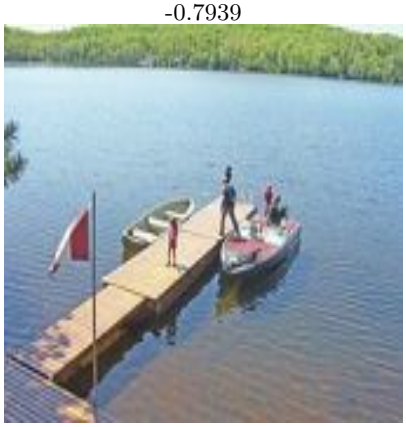
-0.8229

-0.8140

-0.8009



-0.7939



[go fish] - High-scored Negative

-0.4878

-0.5108

-0.5201

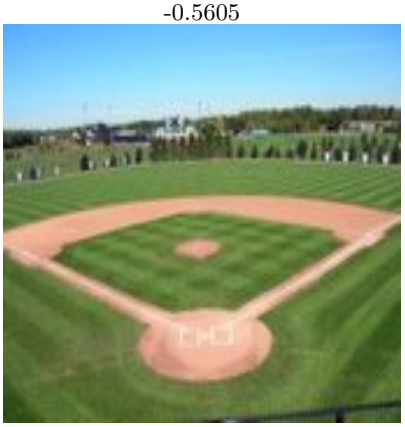
-0.5370

-0.5390

-0.5395

-0.5560

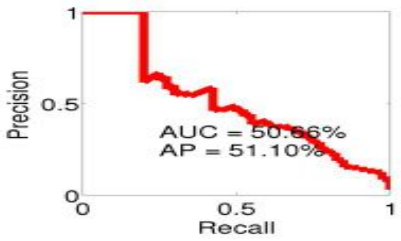
-0.5605



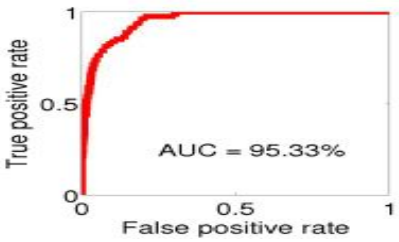
-0.5644

14 eat

Precision-Recall curve



ROC curve



[eat] - High-scored Positives

-0.2989

-0.3634

-0.3736

-0.4469

-0.4758

-0.5011

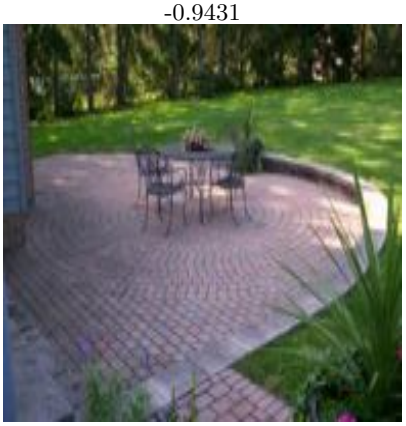
-0.5102

-0.5320

-0.5751

[eat] - Low-scored Positives

-0.9431

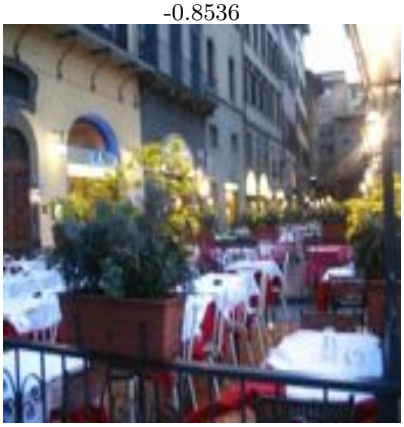


-0.8941

-0.8859

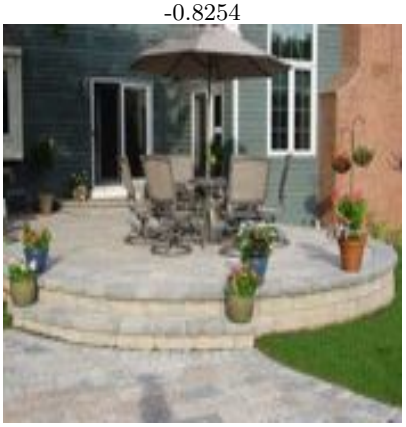
-0.8686

-0.8536



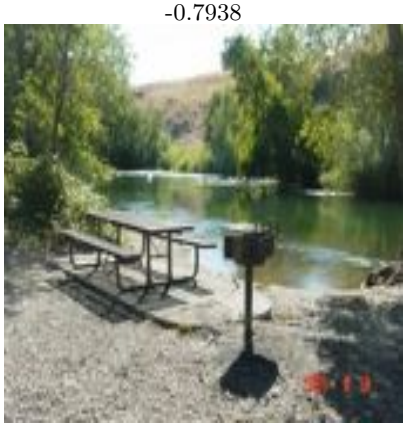
-0.8485

-0.8254



-0.8046

-0.7938



[eat] - High-scored Negative

-0.5459

-0.5560

-0.5598

-0.5663

-0.5747

-0.5839

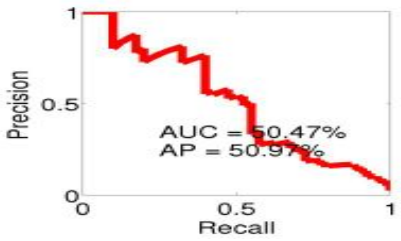
-0.5931

-0.5935

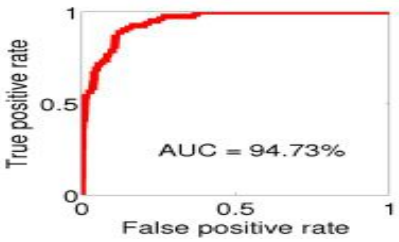
-0.5983

15 shop

Precision-Recall curve



ROC curve

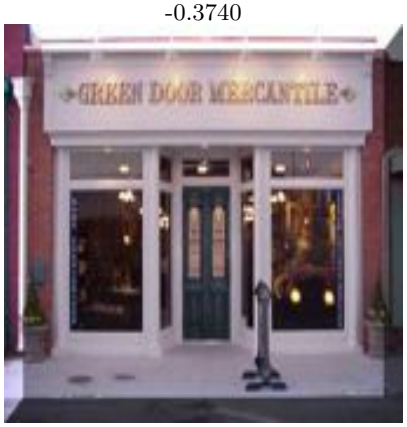


[shop] - High-scored Positives

-0.3140

-0.3546

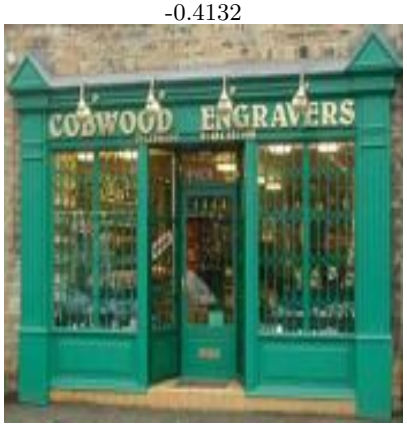
-0.3740



-0.3899

-0.4042

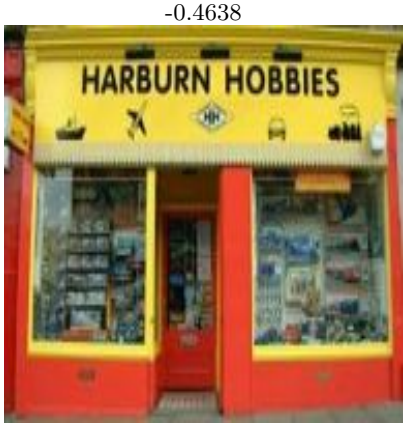
-0.4132



-0.4142

-0.4304

-0.4638



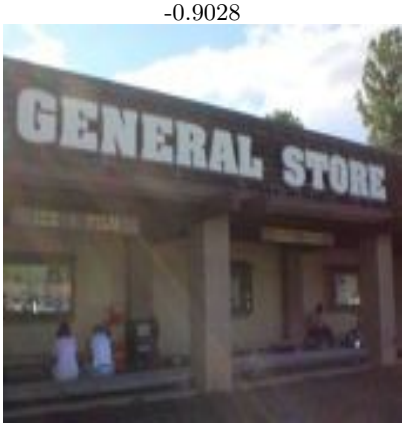
[shop] - Low-scored Positives

-1.0201

-0.9646

-0.9377

-0.9028



-0.8785

-0.8575

-0.8566

-0.8542

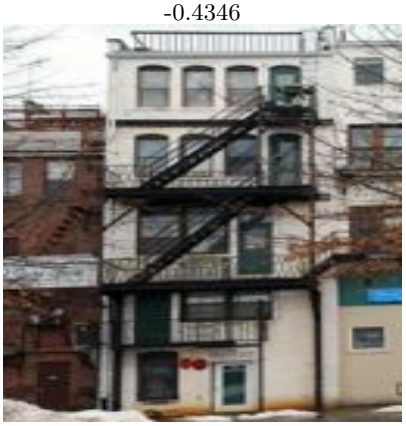
-0.8483

[shop] - High-scored Negative

-0.3993

-0.4267

-0.4346



-0.5290

-0.5392

-0.5884

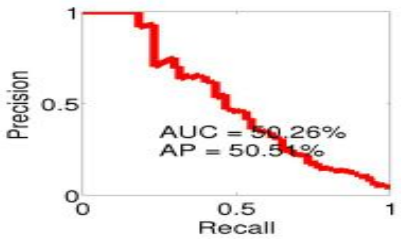
-0.5945

-0.5977

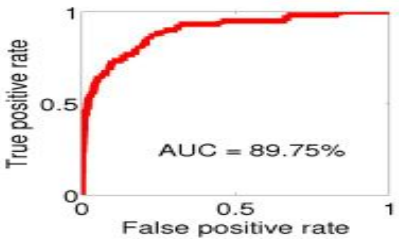
-0.6081

16 sail

Precision-Recall curve

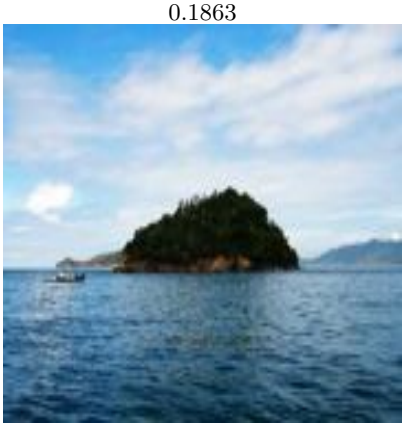


ROC curve

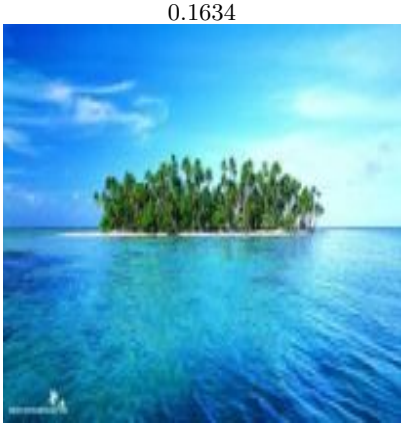


[sail] - High-scored Positives

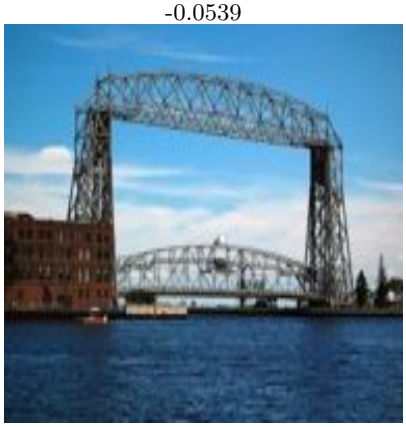
0.1863



0.1634



-0.0539



-0.0733

-0.0800

-0.0900

-0.1326

-0.1721

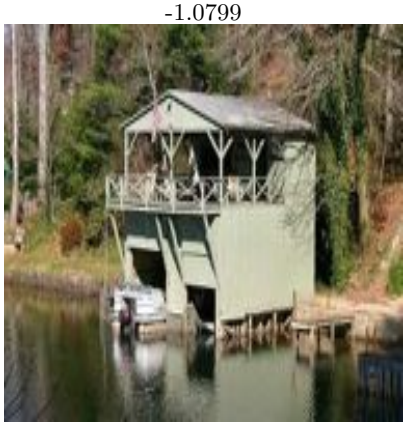
-0.1926

[sail] - Low-scored Positives

-1.1590

-1.0801

-1.0799

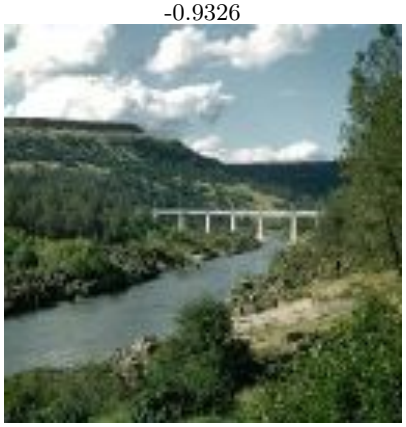


-1.0012

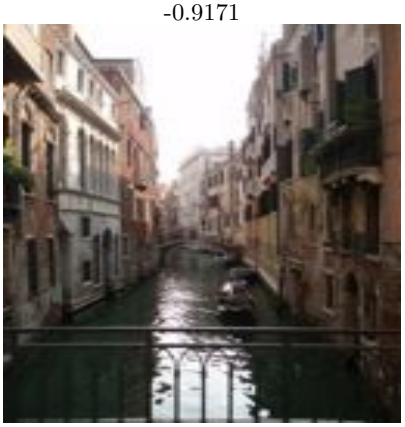
-0.9492

-0.9473

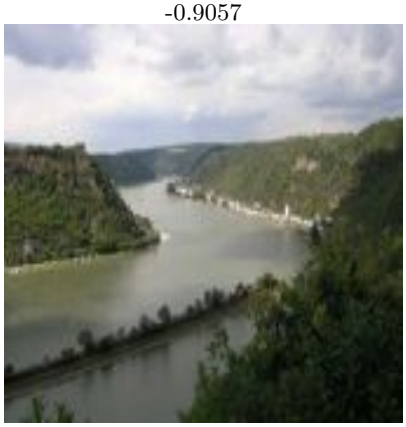
-0.9326



-0.9171



-0.9057



[sail] - High-scored Negative

-0.2351

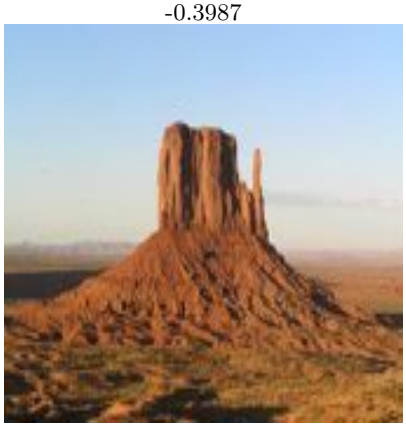
-0.3023

-0.3682

-0.3799

-0.3937

-0.3987



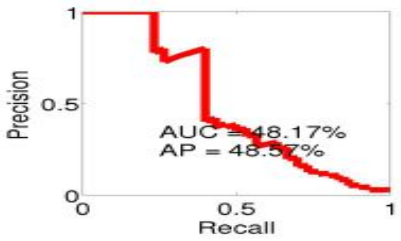
-0.4411

-0.4414

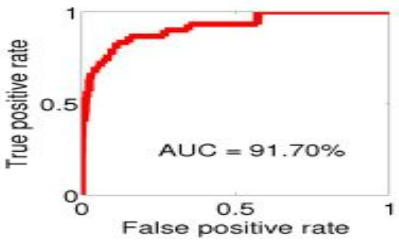
-0.4636

17 dig

Precision-Recall curve



ROC curve



[dig] - High-scored Positives

-0.0128

-0.0573

-0.1548

-0.2775

-0.3230

-0.3257

-0.3363

-0.4456

-0.4942

[dig] - Low-scored Positives

-1.1021

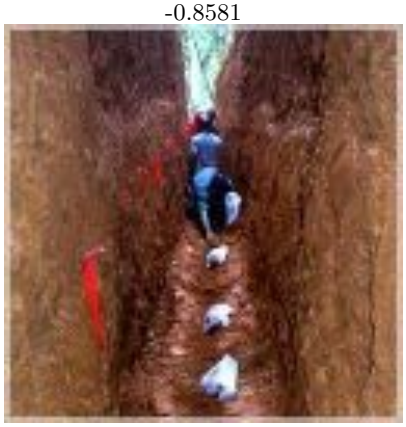
-1.1016

-1.0101

-0.9680

-0.8939

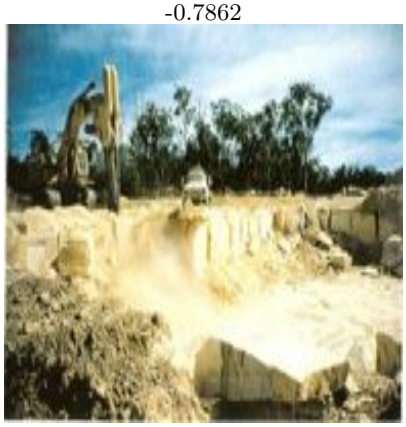
-0.8581



-0.8425

-0.8215

-0.7862

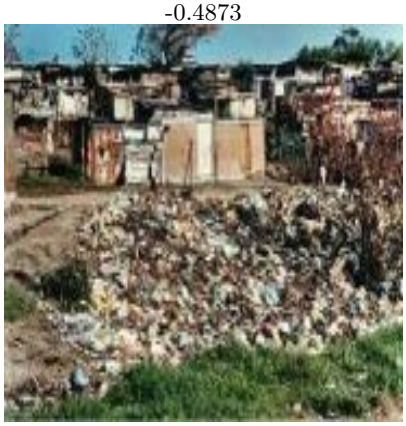


[dig] - High-scored Negative

-0.3943

-0.4438

-0.4873



-0.5384

-0.5452

-0.5492

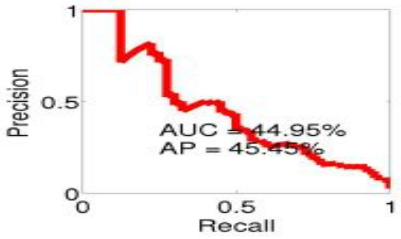
-0.5623

-0.5654

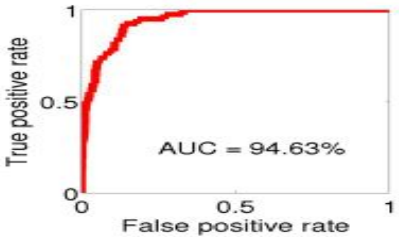
-0.5666

18 sleep

Precision-Recall curve



ROC curve



[sleep] - High-scored Positives

-0.2453

-0.3023

-0.5082

-0.6186

-0.6246

-0.6413

-0.6440

-0.6457

-0.6573

[sleep] - Low-scored Positives

-0.9626

-0.9464

-0.9101

-0.8903

-0.8864

-0.8838

-0.8795

-0.8734

-0.8731

[sleep] - High-scored Negative

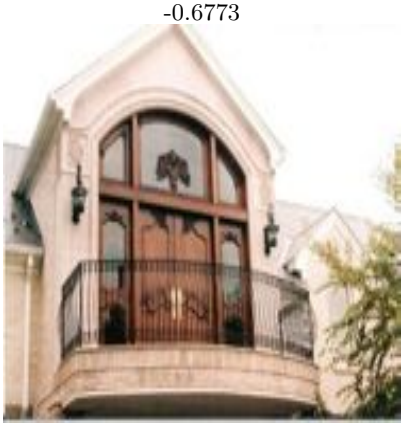
-0.6341

-0.6369

-0.6692

-0.6733

-0.6773



-0.6781

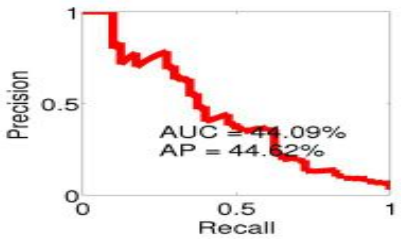
-0.6844

-0.6878

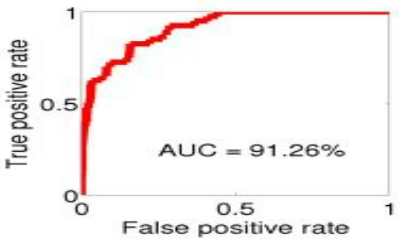
-0.6919

19 play

Precision-Recall curve



ROC curve



[play] - High-scored Positives

0.0415

-0.2469

-0.2870

-0.3049

-0.4097

-0.4649

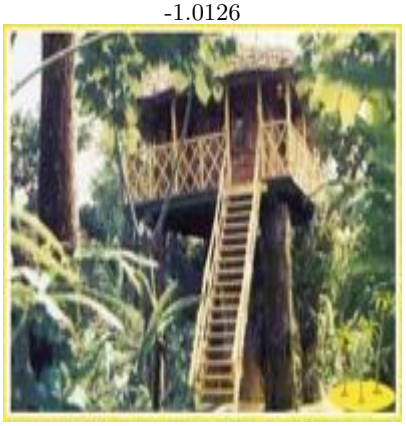
-0.4778

-0.5373

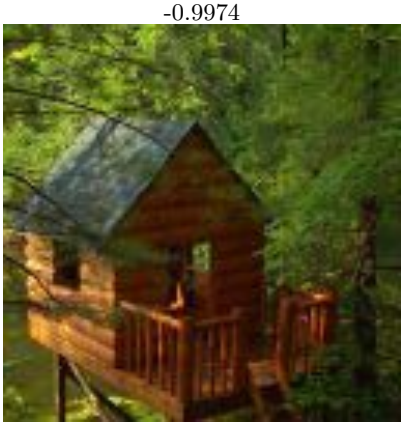
-0.5663

[play] - Low-scored Positives

-1.0126



-0.9974



-0.9858

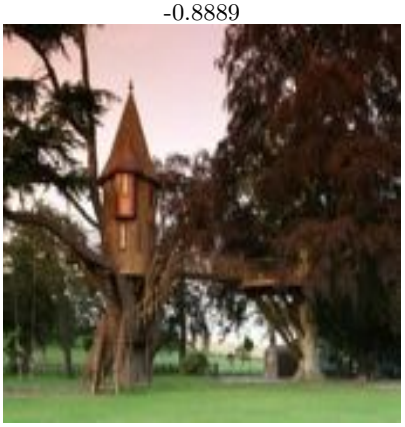
-0.9545

-0.9465

-0.9375

-0.9177

-0.8889

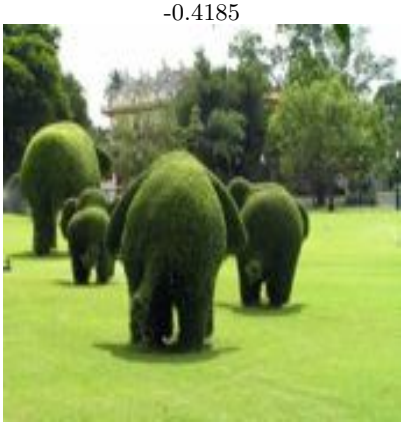


-0.8878

[play] - High-scored Negative

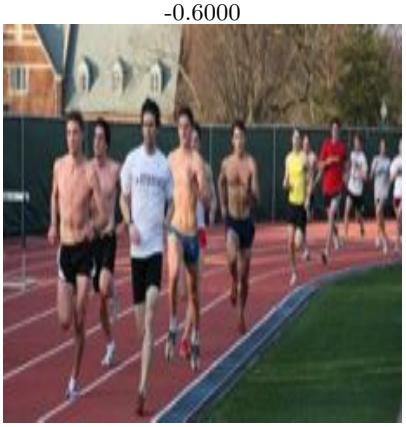
-0.3956

-0.4185



-0.5033

-0.6000



-0.6036

-0.6095

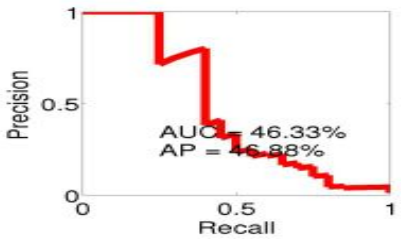
-0.6102

-0.6370

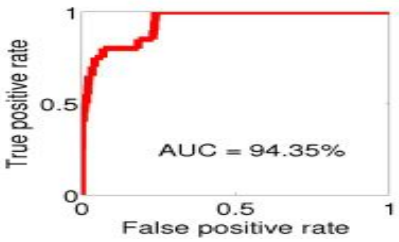
-0.6506

20 skate

Precision-Recall curve

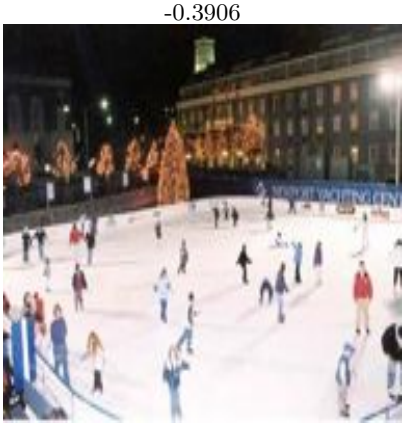


ROC curve

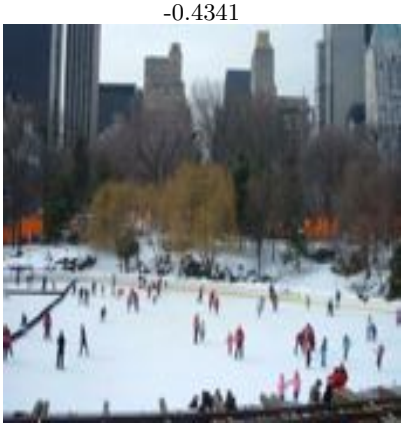


[skate] - High-scored Positives

-0.3906



-0.4341



-0.4924

-0.5645

-0.6106

-0.6493

-0.6530

-0.6585

-0.7450

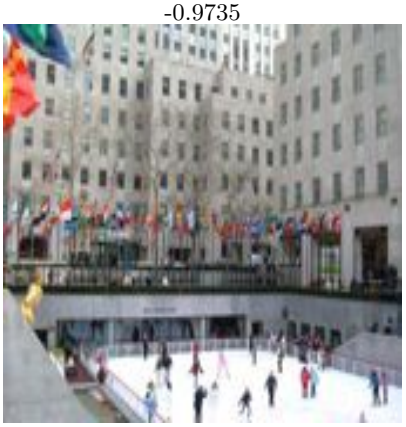
[skate] - Low-scored Positives

-0.9981

-0.9958

-0.9938

-0.9735



-0.8987

-0.8670

-0.8556

-0.8236

-0.8184

[skate] - High-scored Negative

-0.6264

-0.6427

-0.6608

-0.6679

-0.6814

-0.6868

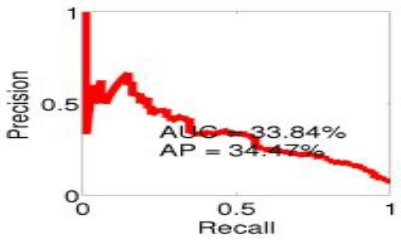
-0.6903

-0.7078

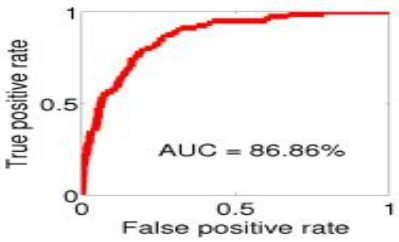
-0.7183

21 live

Precision-Recall curve



ROC curve



[live] - High-scored Positives

-0.0628

-0.1877

-0.2195

-0.2917

-0.2920

-0.3646

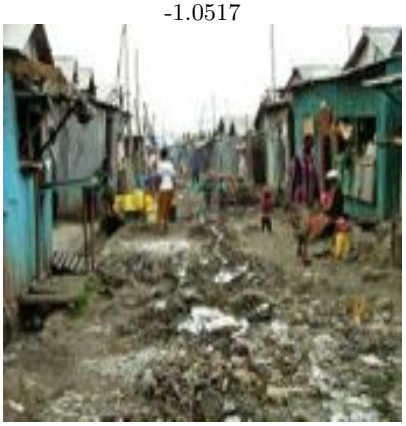
-0.3993

-0.4019

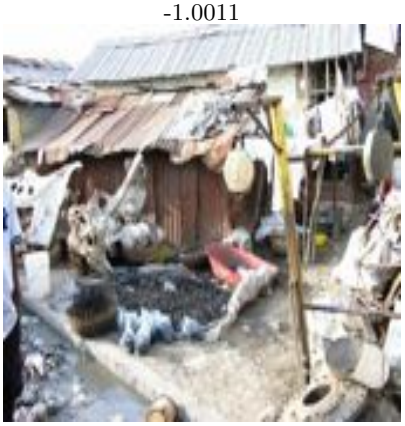
-0.4042

[live] - Low-scored Positives

-1.0517



-1.0011

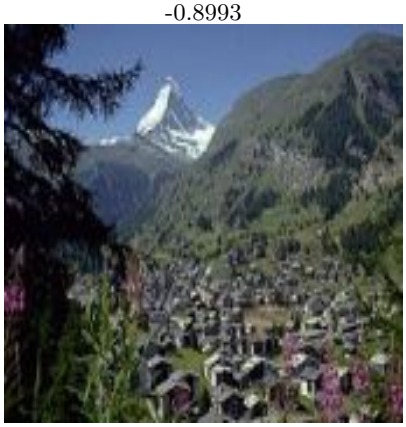


-0.9784

-0.9774

-0.9040

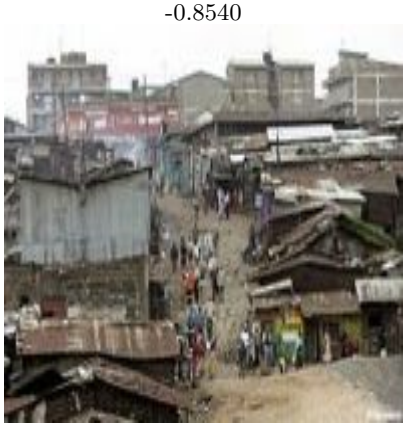
-0.8993



-0.8877

-0.8596

-0.8540



[live] - High-scored Negative

-0.1720

-0.1785

-0.2557

-0.3036

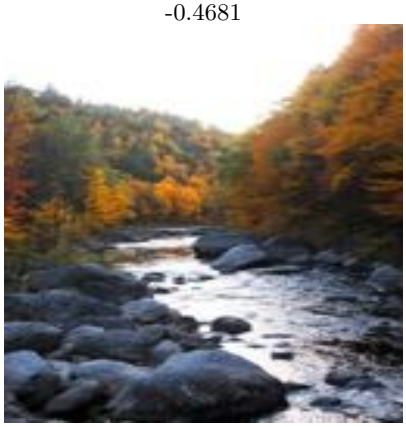
-0.3130

-0.3888

-0.4400

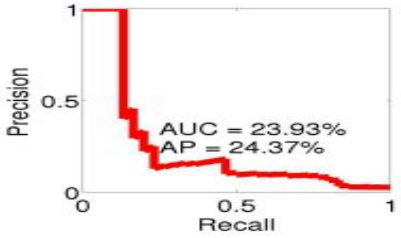
-0.4425

-0.4681

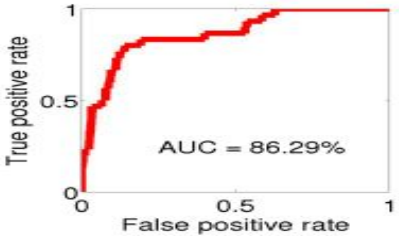


22 ride train

Precision-Recall curve



ROC curve



[ride train] - High-scored Positives

-0.5176

-0.5825

-0.5963

-0.6018

-0.6700

-0.7104

-0.7502

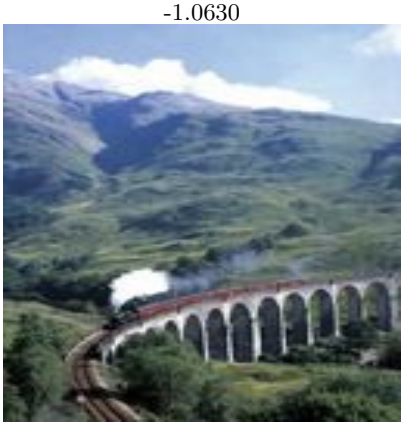
-0.7853

-0.7876

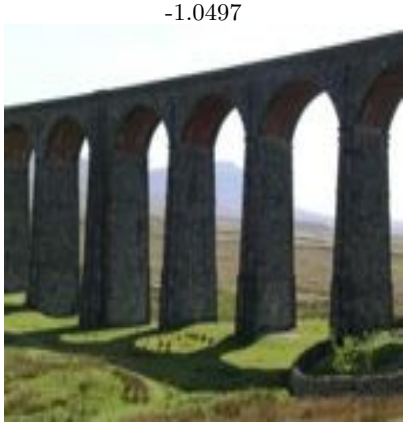
[ride train] - Low-scored Positives

-1.0750

-1.0630

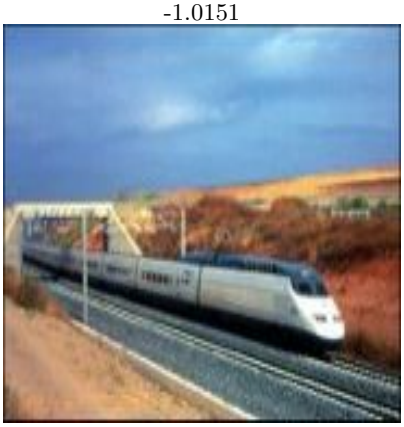


-1.0497



-1.0477

-1.0151

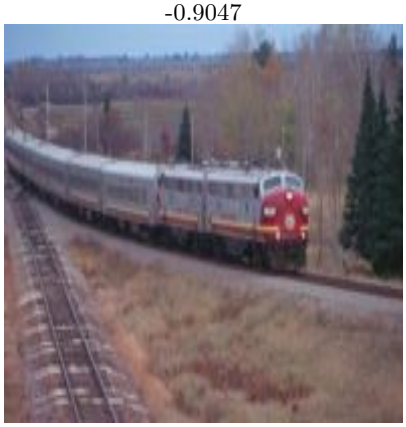


-0.9466

-0.9220

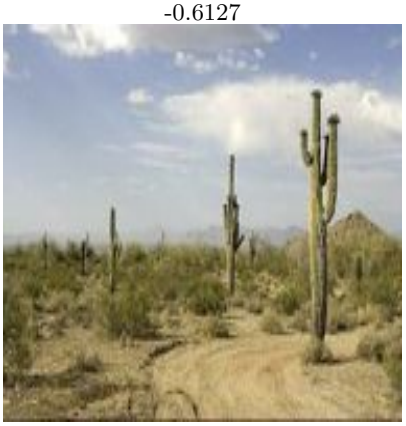
-0.9095

-0.9047

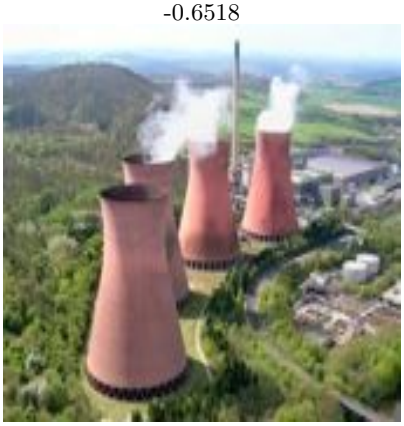


[ride train] - High-scored Negative

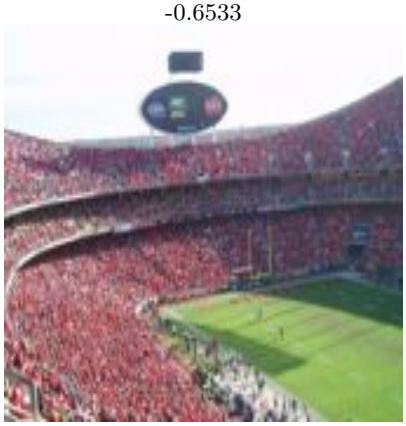
-0.6127



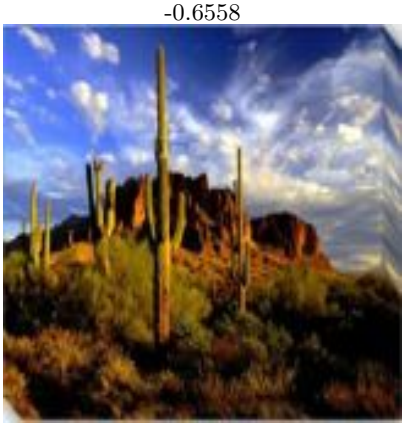
-0.6518



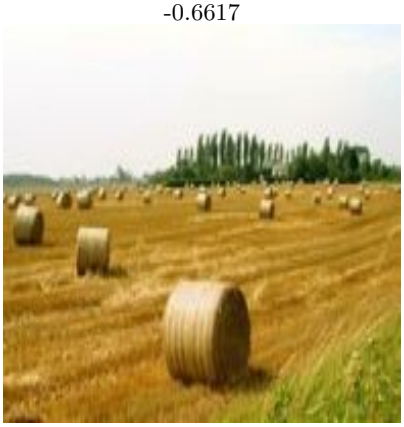
-0.6533



-0.6558



-0.6617



-0.6666

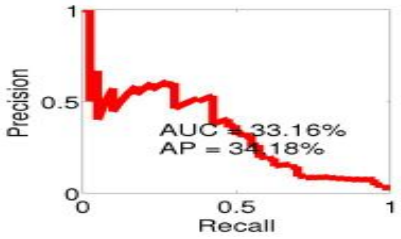
-0.6730

-0.6749

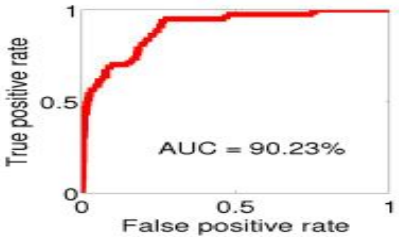
-0.6877

23 cross bridge

Precision-Recall curve



ROC curve



[cross bridge] - High-scored Positives

-0.4555

-0.5044

-0.5371

-0.5625

-0.6002

-0.6015

-0.6190

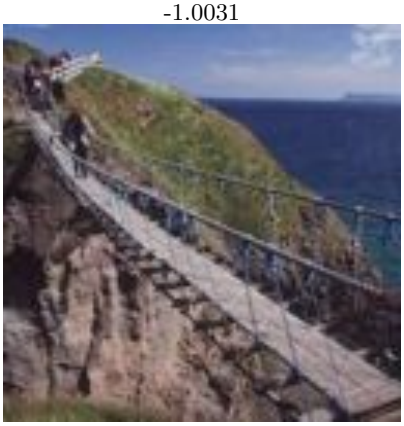
-0.6405

-0.6448

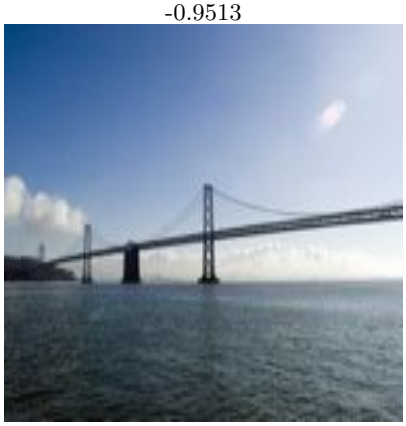
[cross bridge] - Low-scored Positives

-1.0755

-1.0031



-0.9513



-0.9493

-0.9452

-0.9413

-0.9363

-0.9297

-0.9250

[cross bridge] - High-scored Negative

-0.4887

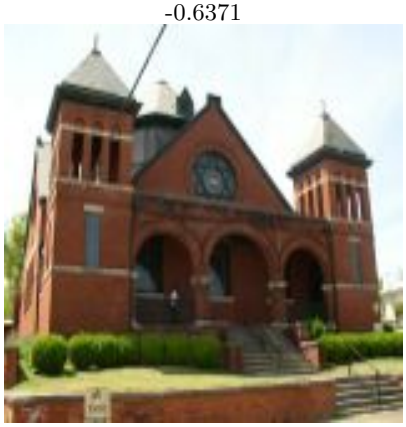
-0.5207

-0.5335

-0.5636

-0.5832

-0.6371



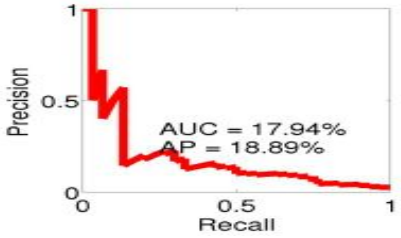
-0.6457

-0.6724

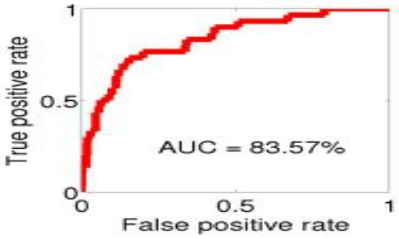
-0.6775

24 ride

Precision-Recall curve



ROC curve



[ride] - High-scored Positives

-0.4964

-0.6483

-0.6695

-0.6720

-0.7606

-0.7622

-0.7666

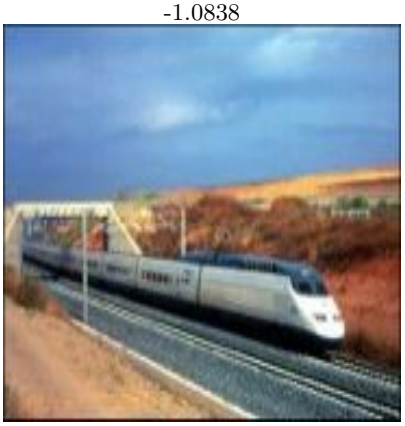
-0.7675

-0.7707

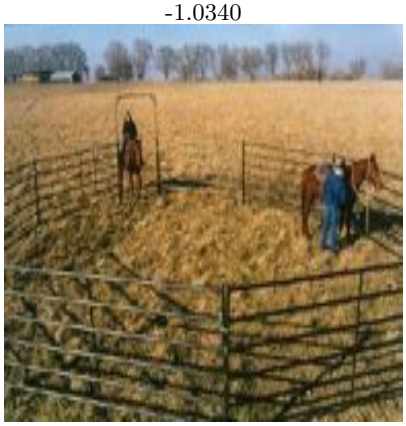
[ride] - Low-scored Positives

-1.1249

-1.0838



-1.0340



-1.0089

-1.0064

-0.9832

-0.9803

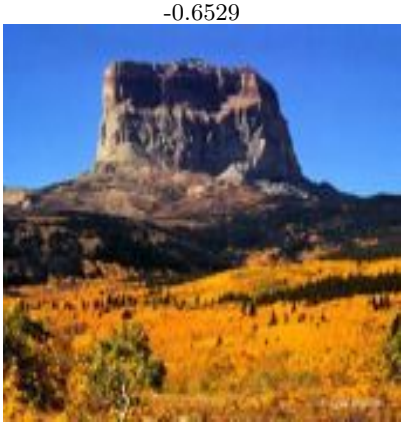
-0.9320

-0.9046

[ride] - High-scored Negative

-0.6391

-0.6529



-0.6672

-0.6777

-0.6895

-0.6972

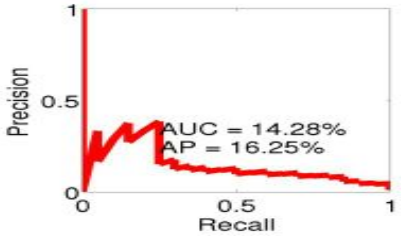
-0.6997

-0.7014

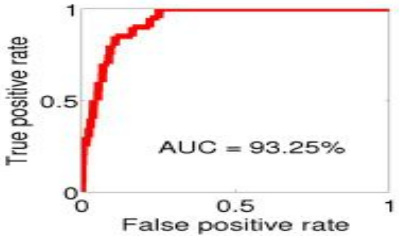
-0.7061

25 learn

Precision-Recall curve

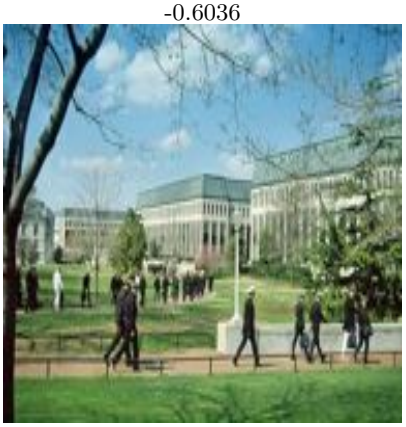


ROC curve

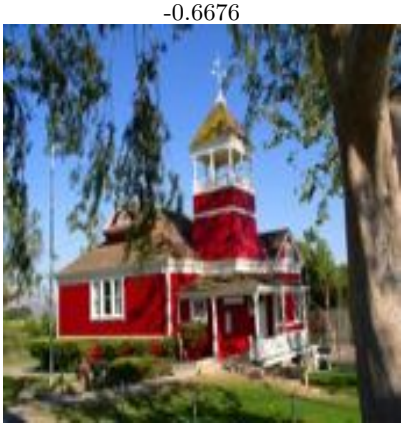


[learn] - High-scored Positives

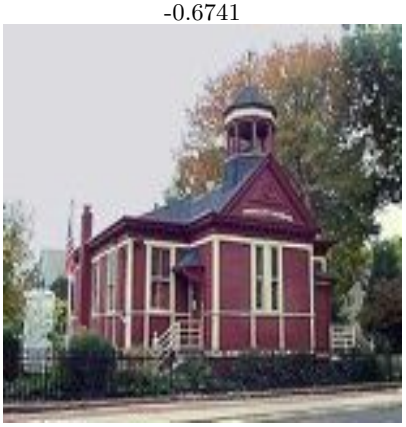
-0.6036



-0.6676



-0.6741



-0.7050

-0.7244

-0.7814

-0.8017

-0.8208

-0.8444

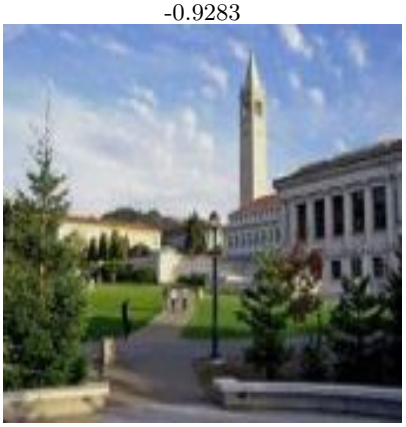
[learn] - Low-scored Positives

-0.9849

-0.9752

-0.9537

-0.9283



-0.9166

-0.9131

-0.8971

-0.8925

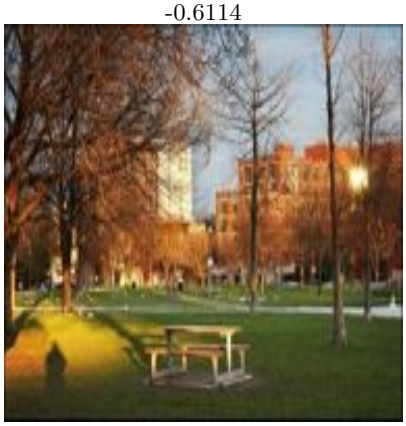
-0.8709

[learn] - High-scored Negative

-0.4654

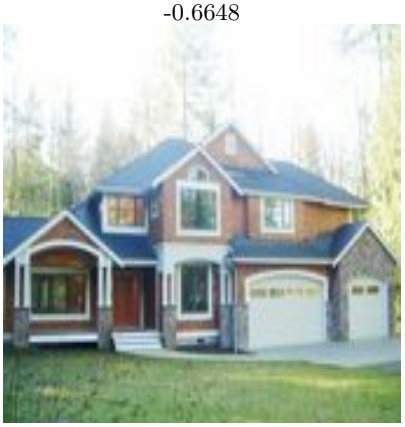
-0.6009

-0.6114



-0.6430

-0.6648



-0.6758

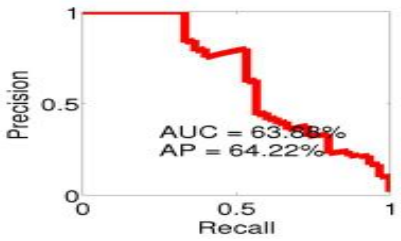
-0.6777

-0.7004

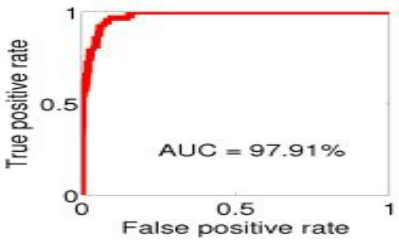
-0.7285

26 smell flower

Precision-Recall curve



ROC curve



[smell flower] - High-scored Positives

0.1201

-0.0532

-0.1919

-0.2073

-0.2110

-0.3004

-0.3105

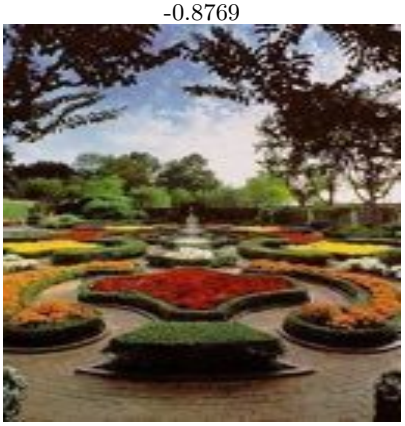
-0.3172

-0.3623

[smell flower] - Low-scored Positives

-0.9769

-0.8769



-0.8356

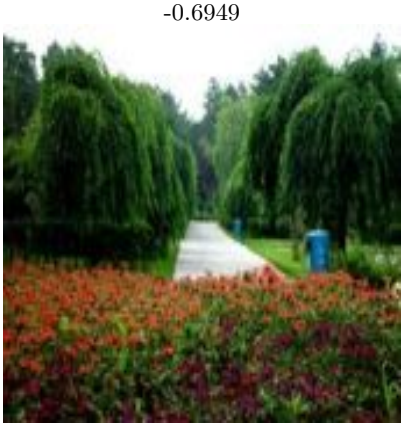
-0.8221

-0.8076

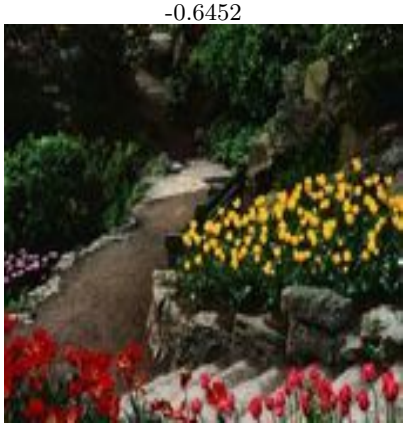
-0.8064

-0.7009

-0.6949



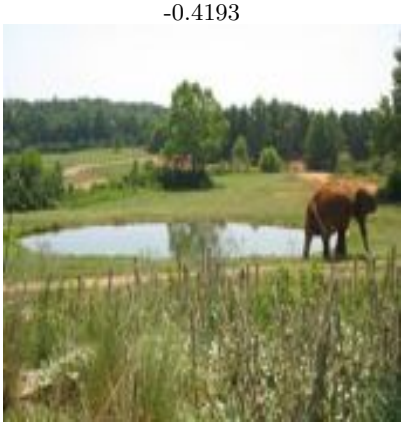
-0.6452



[smell flower] - High-scored Negative

-0.3888

-0.4193



-0.4457

-0.4557

-0.4799

-0.4827

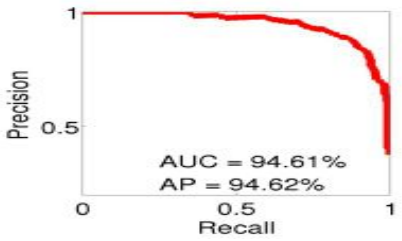
-0.4858

-0.4890

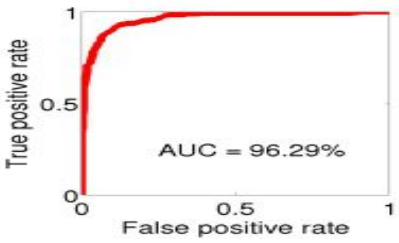
-0.4910

27 take picture

Precision-Recall curve



ROC curve



[take picture] - High-scored Positives

1.4265

1.3576

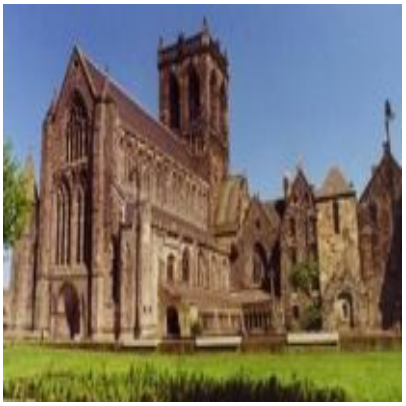
1.3386

1.2013

1.1901

1.1825

1.1283



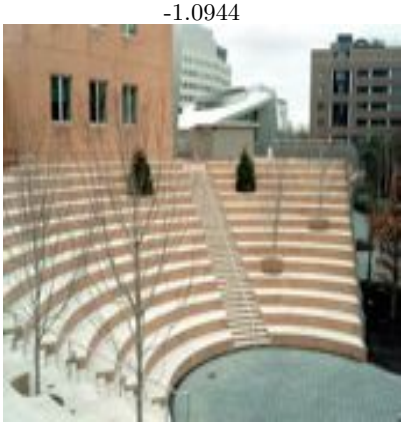
1.0803

1.0696

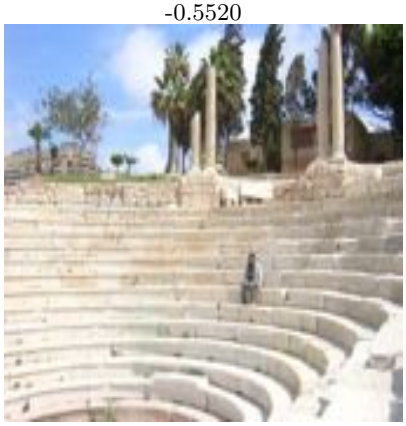
[take picture] - Low-scored Positives

-1.1516

-1.0944



-0.5520



-0.5041

-0.4996

-0.4520

-0.4290

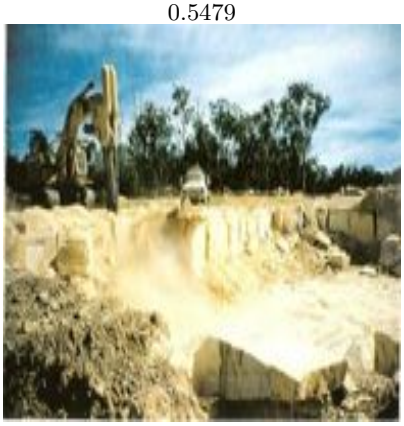
-0.4255

-0.4251

[take picture] - High-scored Negative

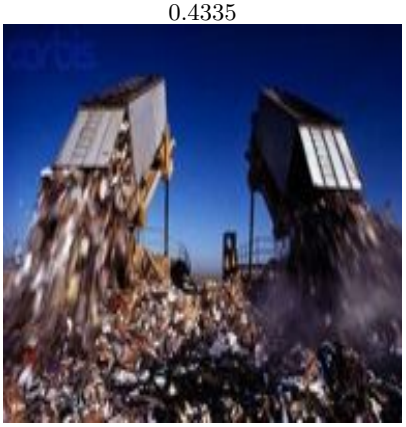
0.5534

0.5479

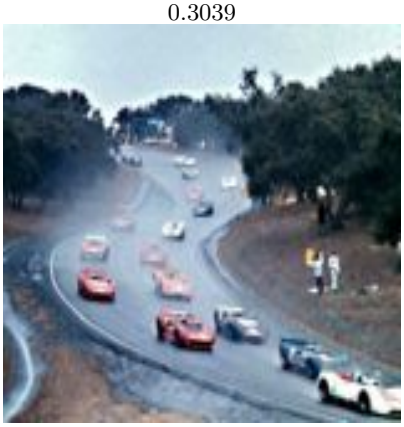


0.4561

0.4335



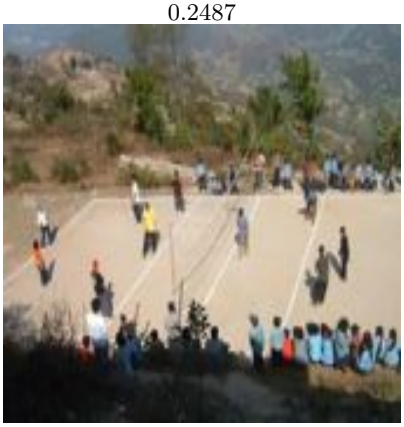
0.3039



0.2935

0.2767

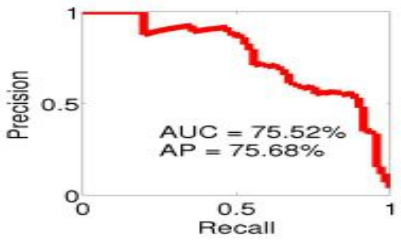
0.2487



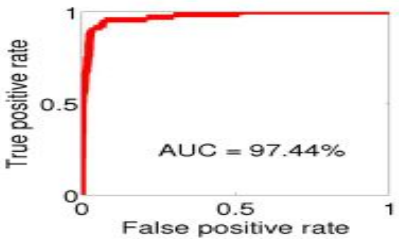
0.2253

28 harvest

Precision-Recall curve



ROC curve



[harvest] - High-scored Positives

0.8944

0.6417

0.5352

0.5313

0.4765

0.4240

0.4173

0.3994

0.2662

[harvest] - Low-scored Positives

-1.1023

-0.9910

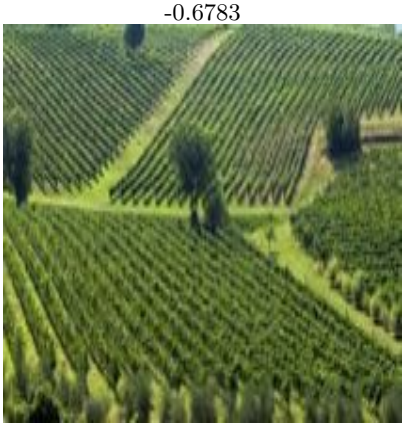
-0.9266

-0.7804

-0.7675

-0.7611

-0.6783

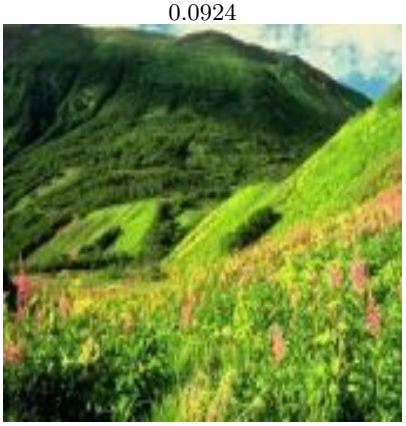


-0.6530

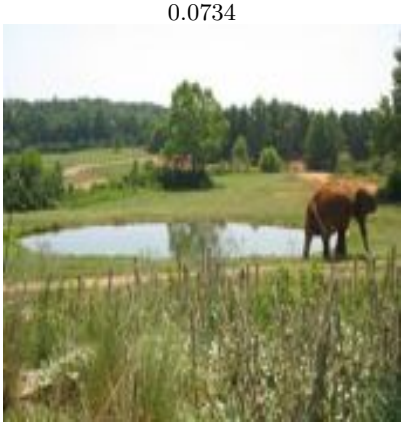
-0.6352

[harvest] - High-scored Negative

0.0924



0.0734



-0.1266

-0.2288

-0.2440

-0.2720

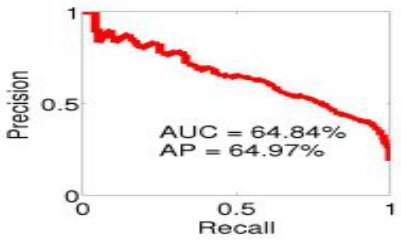
-0.2849

-0.3054

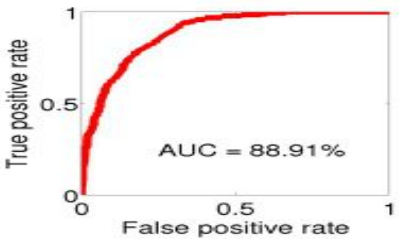
-0.3173

29 relax

Precision-Recall curve



ROC curve



[relax] - High-scored Positives

0.5275

0.5037

0.3829

0.3450

0.2593

0.2543

0.2530

0.2174

0.1849

[relax] - Low-scored Positives

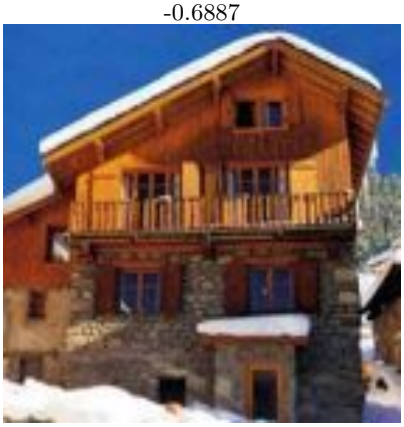
-0.8447

-0.7986

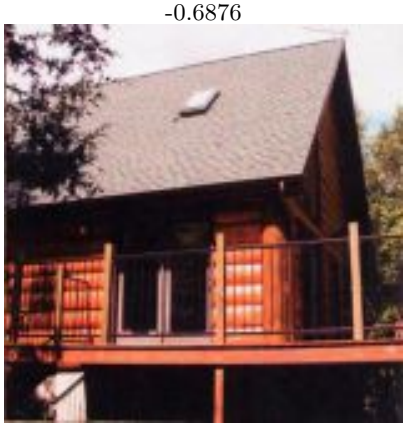
-0.7855

-0.7414

-0.6887



-0.6876



-0.6543

-0.6510

-0.6296

[relax] - High-scored Negative

0.2172

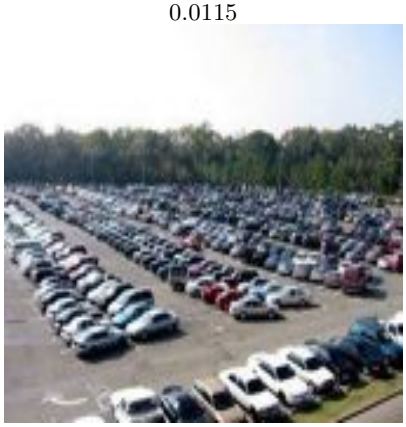
0.1700

0.1077

0.0806

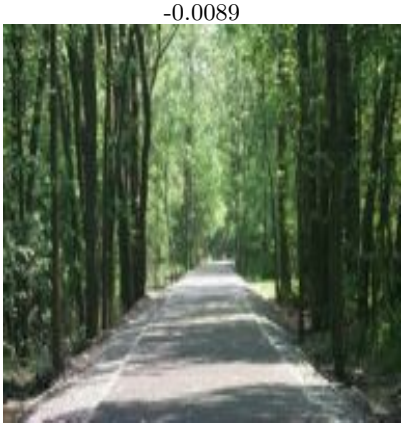
0.0305

0.0115

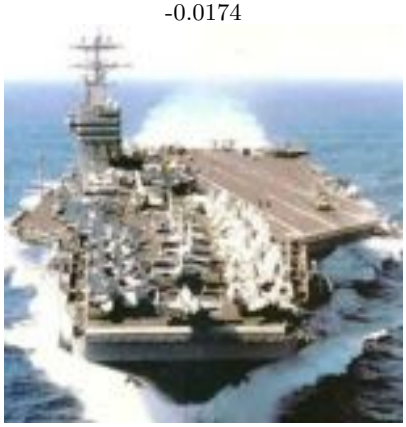


0.0026

-0.0089

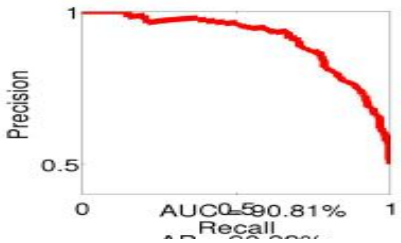


-0.0174

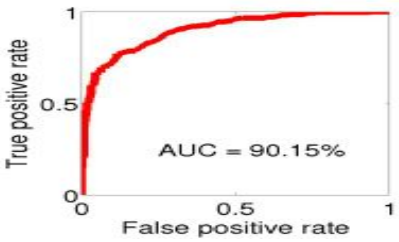


30 take a walk

Precision-Recall curve



ROC curve



[take a walk] - High-scored Positives

1.7940

1.3454

1.2566

1.2118

1.2031

1.1808

1.1602

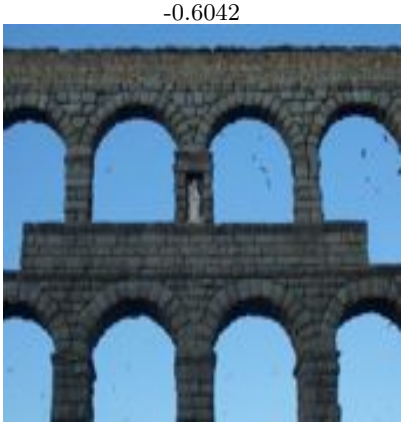
1.1567

1.1534

[take a walk] - Low-scored Positives

-0.9083

-0.6042



-0.5724

-0.5691

-0.5520

-0.5035

-0.4768

-0.4736

-0.4684

[take a walk] - High-scored Negative

0.8126

0.7270

0.7218

0.5637

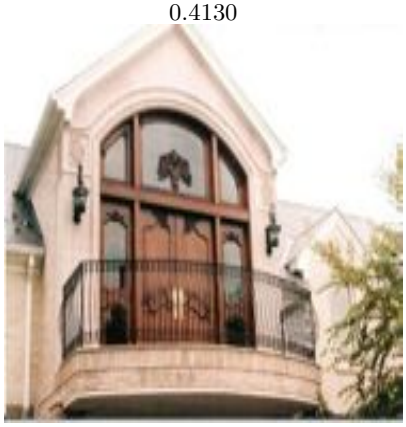
0.5312

0.5040

0.4646

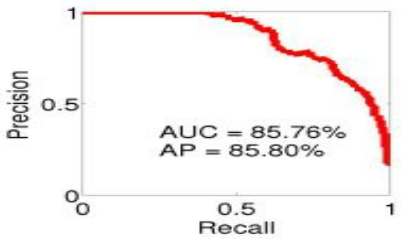
0.4245

0.4130

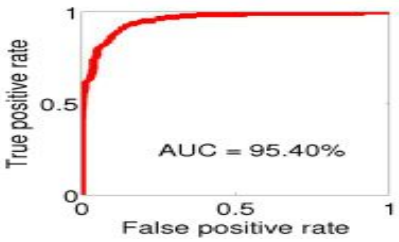


31 sightsee

Precision-Recall curve



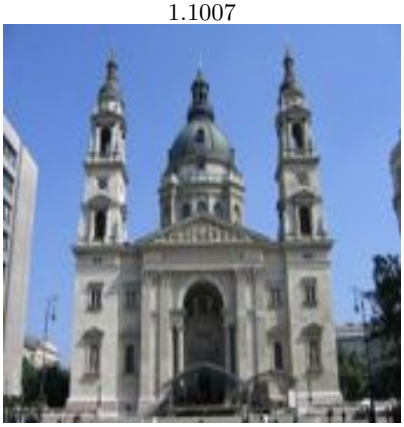
ROC curve



[sightsee] - High-scored Positives

1.1928

1.1007



1.0018

0.8296

0.8025

0.7469

0.6613

0.6240

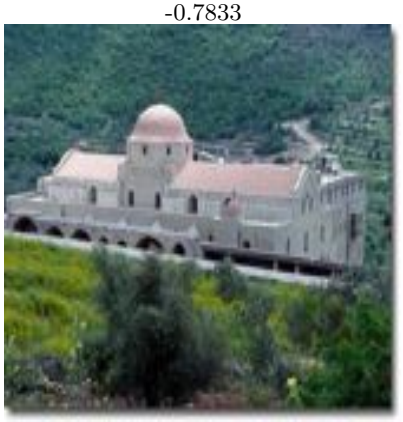
0.5967

[sightsee] - Low-scored Positives

-1.3511

-0.9222

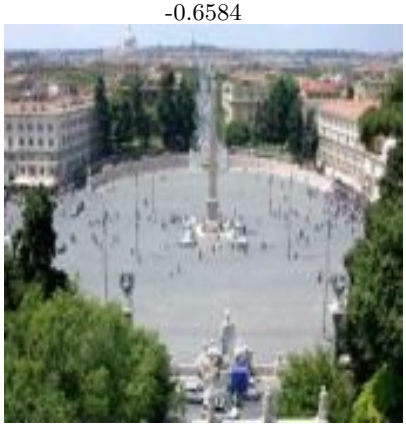
-0.7833



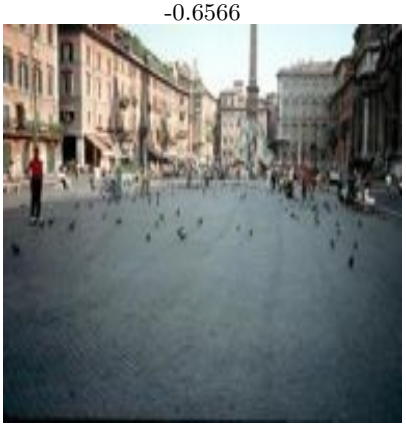
-0.7207

-0.6801

-0.6584



-0.6566

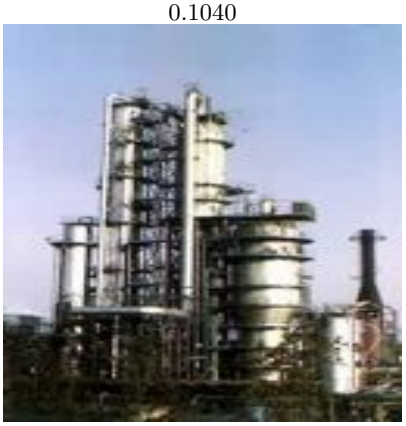


-0.6052

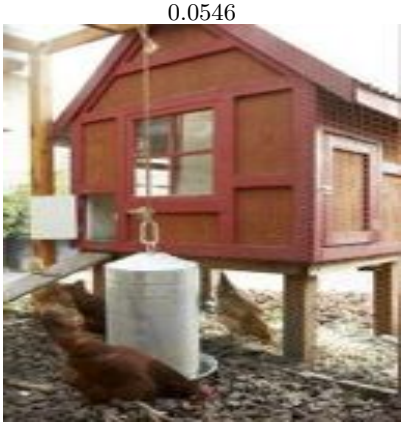
-0.5920

[sightsee] - High-scored Negative

0.1040



0.0546



0.0249

-0.0123

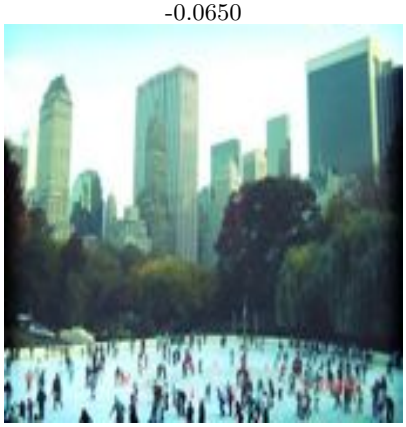
-0.0279

-0.0290

-0.0348

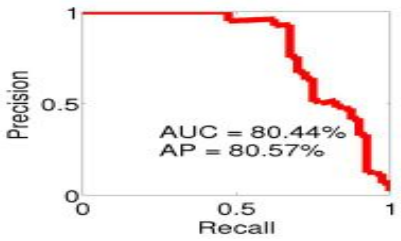
-0.0430

-0.0650

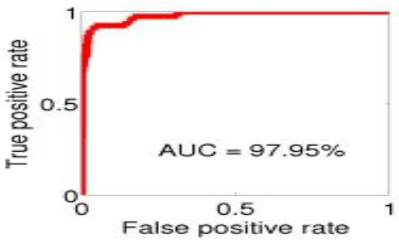


32 cheer

Precision-Recall curve



ROC curve



[cheer] - High-scored Positives

0.3199

0.0825

0.0325

0.0086

-0.0111

-0.0310

-0.0369

-0.0613

-0.1127

[cheer] - Low-scored Positives

-0.9982

-0.9325

-0.9227

-0.8128

-0.7755

-0.7484

-0.7394

-0.7269

-0.7268

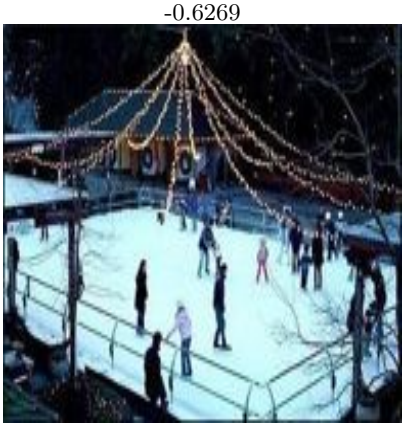
[cheer] - High-scored Negative

-0.3717

-0.5954

-0.6261

-0.6269



-0.6367

-0.6428

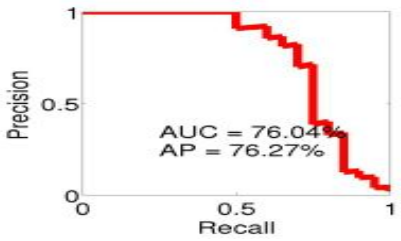
-0.6456

-0.6496

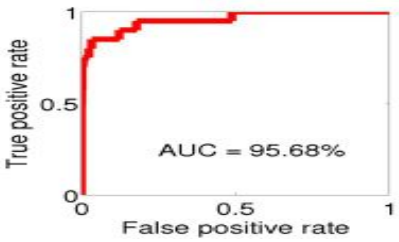
-0.6510

33 explore

Precision-Recall curve



ROC curve



[explore] - High-scored Positives

0.2592

0.2518

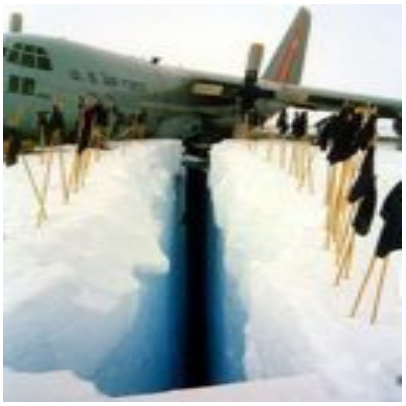
0.1053

0.0943

-0.0272

-0.0542

-0.2588



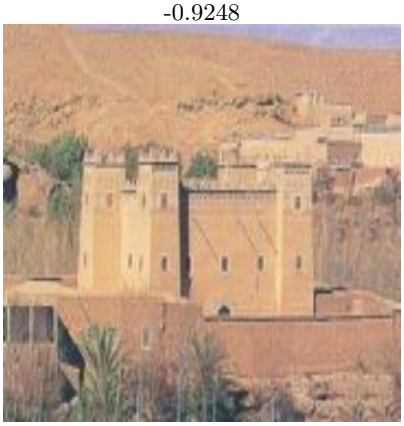
-0.3410

-0.3820

[explore] - Low-scored Positives

-1.0525

-0.9248



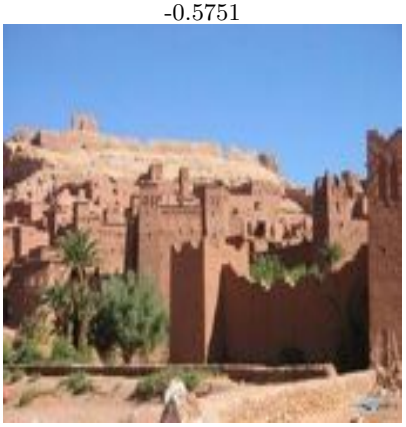
-0.8967

-0.7751

-0.7495

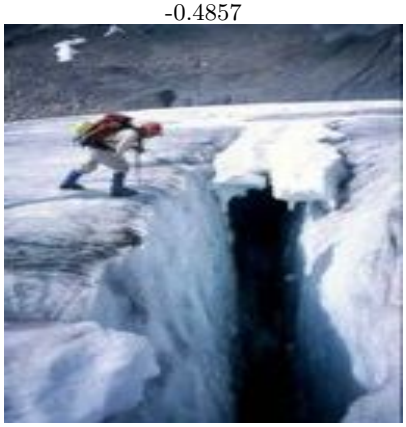
-0.6409

-0.5751



-0.5131

-0.4857

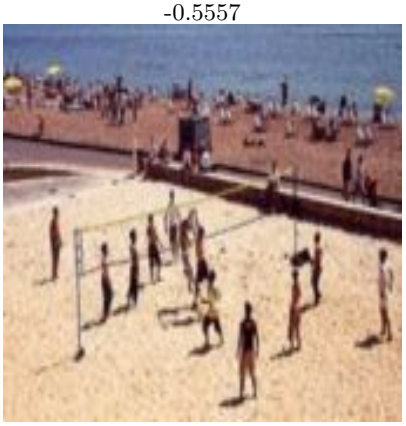


[explore] - High-scored Negative

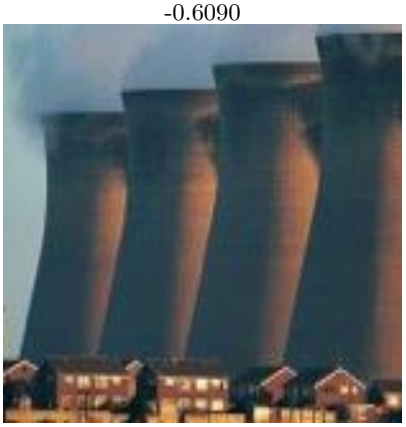
-0.4189

-0.5129

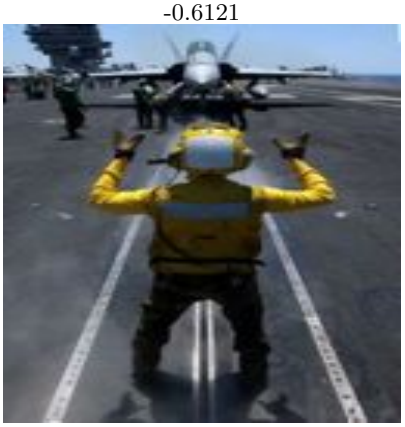
-0.5557



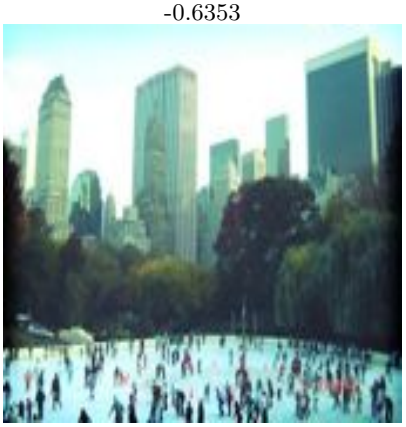
-0.6090



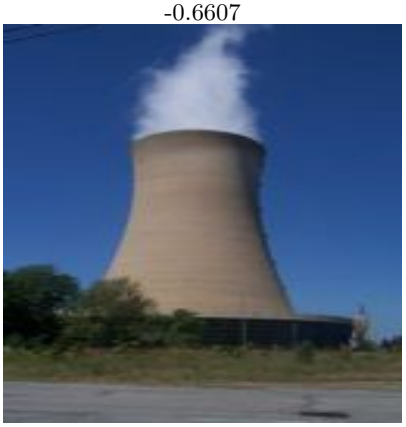
-0.6121



-0.6353



-0.6607

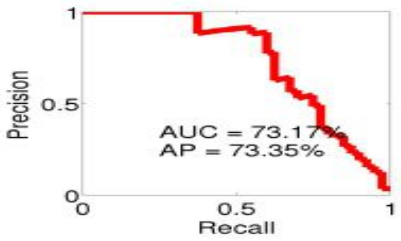


-0.6662

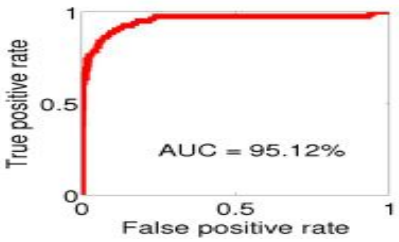
-0.6720

34 sit

Precision-Recall curve



ROC curve



[sit] - High-scored Positives

-0.2577

-0.2604

-0.2821

-0.3493

-0.3497

-0.3887

-0.4018

-0.4340

-0.4429

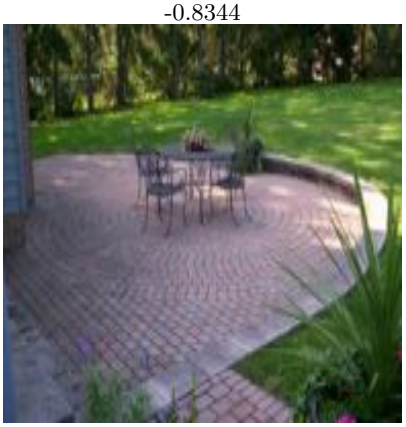
[sit] - Low-scored Positives

-1.1999

-0.8928

-0.8660

-0.8344



-0.8203

-0.8021

-0.7814

-0.7739

-0.7638

[sit] - High-scored Negative

-0.5550

-0.5663

-0.5814

-0.5935

-0.6065

-0.6079

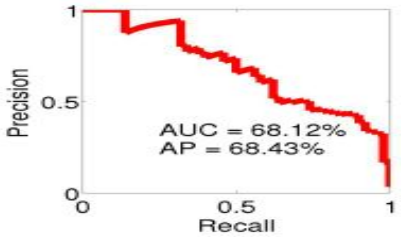
-0.6226

-0.6344

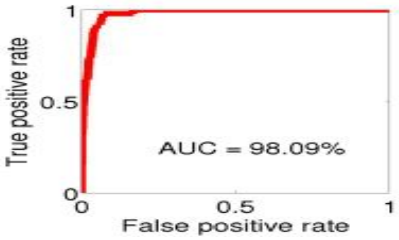
-0.6368

35 garden

Precision-Recall curve



ROC curve



[garden] - High-scored Positives

0.3628

0.3281

0.2091

0.1980

0.1555

0.0947

0.0862

0.0497

-0.0566

[garden] - Low-scored Positives

-0.9182

-0.7889

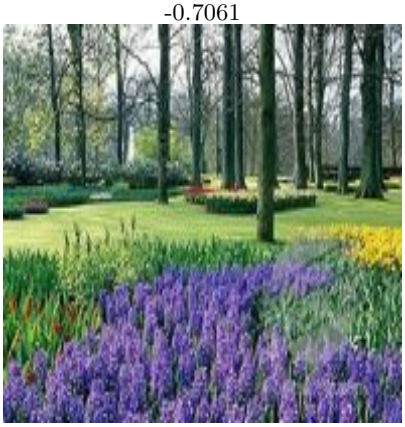
-0.7760

-0.7680

-0.7394

-0.7275

-0.7061



-0.7045

-0.7012

[garden] - High-scored Negative

0.0842

-0.2195

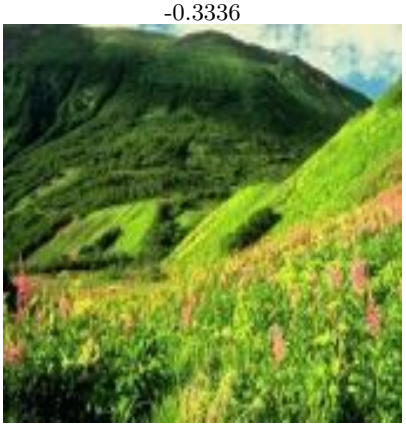
-0.2324

-0.2378

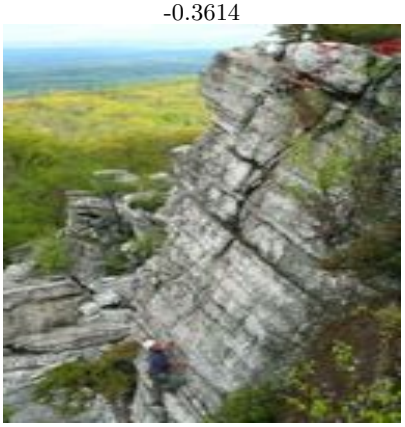
-0.2699

-0.3199

-0.3336



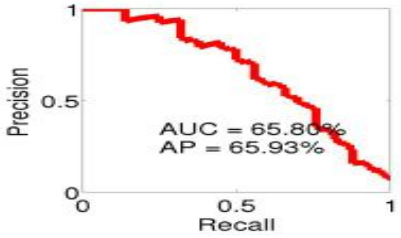
-0.3614



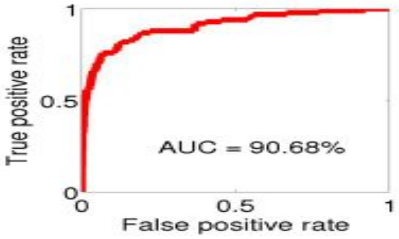
-0.3722

36 work

Precision-Recall curve



ROC curve

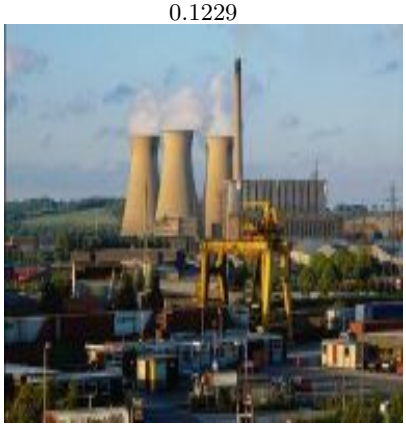


[work] - High-scored Positives

0.1767

0.1274

0.1229



0.1193

0.0894

0.0588

0.0531

-0.0436

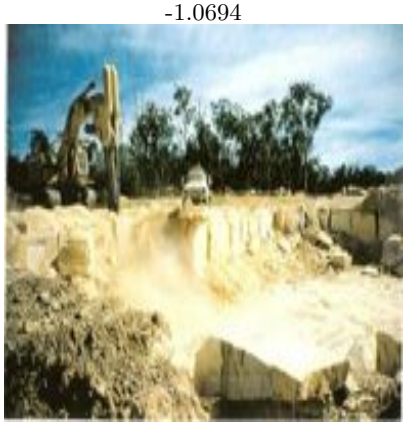
-0.0509

[work] - Low-scored Positives

-1.2828

-1.1395

-1.0694



-1.0112

-1.0061

-0.9981

-0.9576

-0.9295

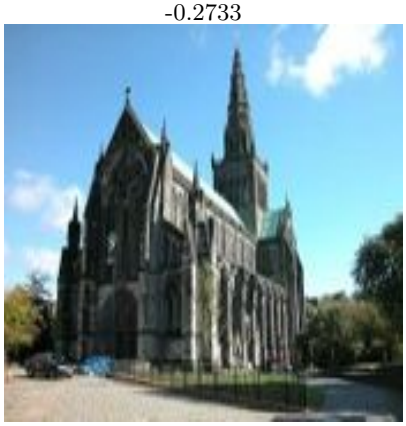
-0.9081

[work] - High-scored Negative

-0.1603

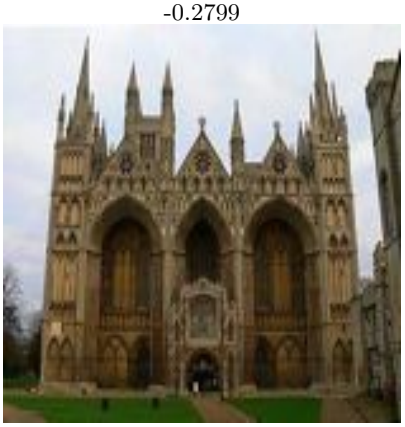
-0.2298

-0.2733



-0.2743

-0.2799



-0.2910

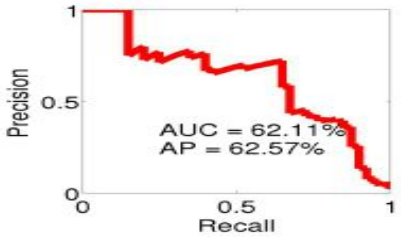
-0.2980

-0.3216

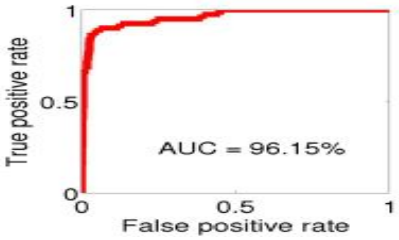
-0.3404

37 play golf

Precision-Recall curve



ROC curve



[play golf] - High-scored Positives

0.3897

0.3327

0.2692

0.2559

0.2498

0.2494

0.0089

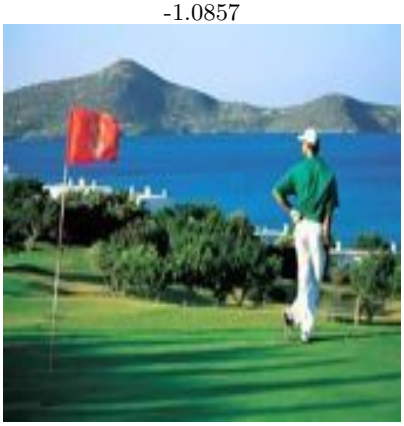
-0.0250

-0.0859

[play golf] - Low-scored Positives

-1.1065

-1.0857



-1.0053

-0.9197

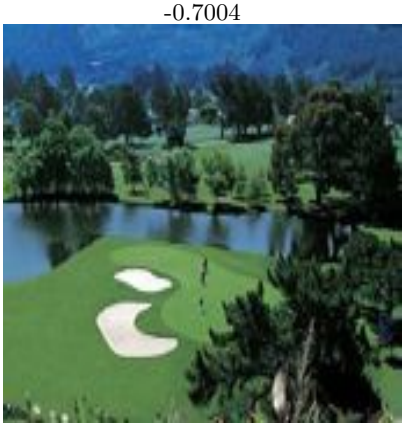
-0.8075

-0.7380

-0.7180

-0.7021

-0.7004



[play golf] - High-scored Negative

0.1195

0.0479

-0.0491

-0.1401

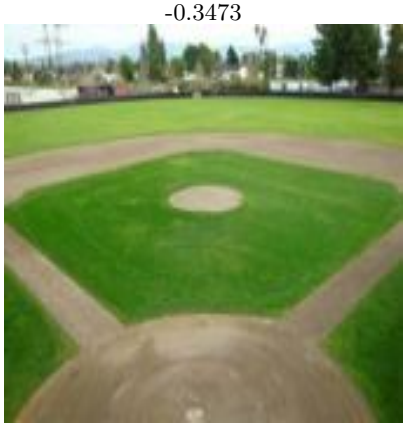
-0.2207

-0.2442

-0.2737

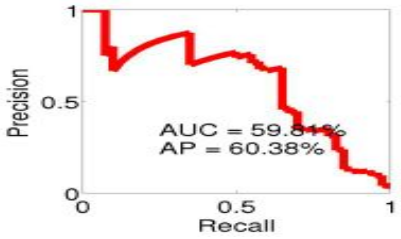
-0.2804

-0.3473

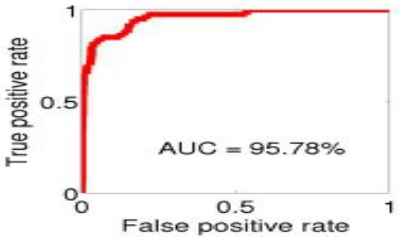


38 fly

Precision-Recall curve



ROC curve



[fly] - High-scored Positives

0.2043

0.1512

0.0125

-0.0343

-0.1059

-0.1116

-0.1255

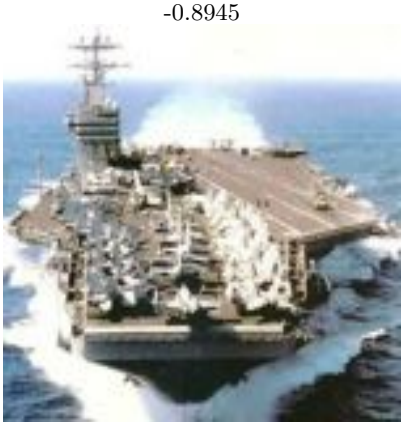
-0.1385

-0.1506

[fly] - Low-scored Positives

-1.1192

-0.8945



-0.8610

-0.8397

-0.8346

-0.8072

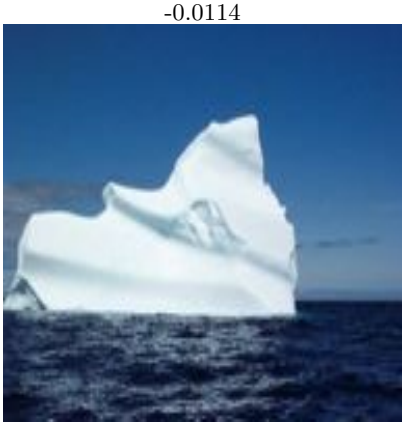
-0.6869

-0.6186

-0.5907

[fly] - High-scored Negative

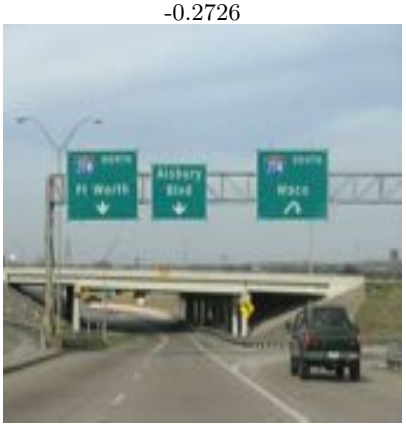
-0.0114



-0.0859

-0.2673

-0.2726



-0.2992

-0.3021

-0.3679

-0.3884

-0.3974