PRATEEK JOSHI

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EDUCATION

M.S., Electrical Engineering, University of Southern California**,** USA Aug 2009 – May 2011
B.Tech, Electronics and Communication Engg, National Institute of Technology Karnataka, India Aug 2005 – July 2009

GPA: 4.0/4.0

TECHNICAL SKILLS

Programming Languages: Python, C++, C
Applications: OpenCV, scikit-learn, Caffe, Neurolab, and a slew of machine learning libraries
Operating Systems: Mac OS X, Linux

EXPERIENCE

Artificial Intelligence Developer - Pluto AI Mar 2015 – Present

- Working on research and development of deep learning algorithms sequential data

Computer Vision Developer - Stealth mode startup July 2014 – Feb 2015

- Worked on research and development of computer vision algorithms centered on object recognition (Python)

Computer Vision Architect and Developer - MeCommerce, San Francisco, CA, USA Dec 2012 – July 2014

- Worked on research and development of computer vision and machine learning algorithms for the mobile platform
- Developed algorithms to extract 3D information about the human body from 2D images using a smartphone (C++ and Obj-C)

Mobile Computer Vision Developer - Nvidia, Santa Clara, CA, USA June 2011 – Dec 2012

- Worked on research and development of computer vision on mobile phones and tablets based upon Nvidia Tegra processors
- Developed algorithms for Augmented Reality, Image Registration, Object Tracking, Object Removal, HDR Imaging
- Developed various techniques for the application of motion vectors from video encoder to real-time computer vision and also to improve the speed of computer vision algorithms using the GPU

Internship - Nvidia, Santa Clara, CA, USA Jan 2011 – May 2011

- Research and development of advanced computer vision applications for the mobile platform
- Worked on vision based Augmented Reality for mobile devices**.** Demo implementation on Android-based Tegra tablet

Internship - Qualcomm, San Diego, CA, USA May 2010 – August 2010

- Worked on video content analysis (using OpenCV library in C++) to extract visual information from the transmitted video
- Worked on designing a fast algorithm for accurate 'cut' scene change detection in Matlab for temporal alignment of two video sequences (video quality metric)

Internship - Microsoft Research, Bangalore, India April 2008 – July 2008

- Worked on various signal processing and classification methods which were applied to problems in knowledge-based speech recognition and user-identification using face image and spoken password (Matlab and C#)

Research Assistant – Indian Institute of Science, Bangalore, India April 2007 – July 2007

- Developed various real time embedded systems using Atmel 89S52 microcontroller including a line following robot

PATENTS, PUBLICATIONS AND DEMOS

- Published author of five books:
  - Python Machine Learning Cookbook - https://goo.gl/jizu0f
  - OpenCV with Python by Example - http://goo.gl/o6Cr40
  - Python: Real World Machine Learning - https://goo.gl/o4wwcz
  - OpenCV: Computer Vision Projects with Python - https://goo.gl/COlwWe
  - OpenCV by Example (based on C++): http://goo.gl/U2mc14

- Multiple patents centered on the algorithms for upper body measurements using smartphone, contour detection, object recognition, and 3D modeling.
- Prateek Joshi and C.-C.Jay Kuo, "Security and Privacy in Online Social Networks - A Survey", *IEEE International Conference on Multimedia and Expo,* Barcelona, Spain, July 2011
- Tech Demo at CES 2012 (Consumer Electronics Show) in Las Vegas
  - Part of the Nvidia team which developed algorithms for High Dynamic Range Imaging on Nvidia Tegra-3 tablet using the device camera
- Tech Demo at IEEE Computer Vision and Pattern Recognition (CVPR) 2011 conference in Colorado Springs
  - Part of the Nvidia team which developed algorithms for computer vision demos on Tegra-3 tablet
  - Demos included Vision based Augmented Reality, Seam Carving and Face Detection
- Represented Nvidia at the Augmented Reality conference ARE2011 in Santa Clara, California, May 2011

ACHIEVEMENTS

- Hackathon prize winner at Facebook Photo Hack Day (Best Image Processing Hack)
- Launch Hackathon 2013 Award for the Best Use of Proximity Sensor
- Hackathon prize winner at DeveloperWeek 2013 (Best Social Cause and overall top 10)
- Elected to become a member of Phi Kappa Phi Honor Society at USC for academic excellence and an Ambassador for Electrical Engineering Masters program
- My blog has been visited in 200+ countries. Featured on ReadWrite as a guest author.
- Selected to become a mentor for "Engineers as Teachers" program organized by Iridescent Learning (a non-profit org. at USC). I taught the kids how to design and build electronic circuits by doing hands-on experiments during February-April 2010
- Won a Matlab coding contest as an undergraduate student (India, 2009) which involved developing a program which could take in live streaming of images (English alphabets falling from the top, projected on a screen, captured using a webcam), perform optical character recognition and perform selective deletion of the characters

PROJECTS

3D Gesture Recognition Using Leap Motion Controller Jan 2013 – Feb 2013

- Developed a 3D gesture recognizer for people with nervous disorders. The system would compensate for shaky input, sudden jerks and other forms of noisy data

Real-time Image Registration Jan 2012 – June 2012

- Developed real-time image registration algorithms for High Dynamic Range Imaging on Android-based Tegra tablet. The algorithms were developed to take care of noisy images captured using handheld devices

Object Tracker May 2011 – Aug 2011

- Developed and implemented an object tracker on Android that would track a predefined shape in real time

Augmented Reality Jan 2011 – May 2011

- Developed an augmented reality application on an Android tablet that would track fiducials and natural patterns in real time, and overlay graphics on top of it

Behavior Analysis Using Visual Data Aug 2010 – Dec 2010

- Worked on modeling human behavioral patterns and predicting the mental state of a person using visual and vocal cues. Built computer vision and machine learning algorithms for analysis and prediction.

Multiclass Object Recognition Aug 2010 – Dec 2010

- Worked on multiclass object recognition using HMAX (biologically inspired features)

Handwritten Digit Recognition Jan 2010 – May 2010

- Developed and implemented a pattern classification system for handwritten digits using NIST database

Hobby Projects Aug 2008 – Present

- My other hobby projects include Image Segmentation, Image Matcher, Pano Stitcher, Web Crawler, and few other projects centered on computer vision algorithms, Python hacks, and machine learning.