Sayem Mohammad Siam

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HIGHLIGHTS

- Research expertise (2+ years) in **Image Processing, Computer Vision, SLAM, Robotics, Machine learning and Probabilistic Model**
- Two years work experience as a software developer at **Samsung R&D Institute**
- Designed and developed several **Android and Tizen applications**
- Developed several **websites** using MySQL, PHP, Javascript, Jquery, HTML and CSS
- Expertise in **Java, Python, C&C++, UNIX, PHP, HTML, CSS, JavaScript, Jquery, Matlab, ROS,MySQL, Oracle,git, svn, AWS**
- Ranked **43 among 20452** global Samsung contestants in Samsung Sotong topcoder
- **Runner up** in the Intra-IUT programming contest 2011 among 20+ teams
- Open to relocation

WORK EXPERIENCE

CURRENT
SEP 2014

TEACHING AND RESEARCH ASSISTANT
University of Alberta, Edmonton, Canada

- **Teaching Assistant**: Game Theory (C++), Data Structure (Python), Image Processing (Python) Responsibilities: Delivered lab lecture, solved students' code bug, graded exam scripts, conducted weekly help sessions.

Research Projects:

- Bear Detection Using Convolution Neural Network (Python, Matlab, AWS)
  - Used CNN model (pre-trained on ImageNet dataset) to extract image feature
  - Compared the result between HOG+SVM and CNN+SVM
- Gender and age group classification using Markov Random Field (Matlab)
  - Used Gaussian Markov Random (MRF) Fields to build functional connectivity models that can be used as classifiers using resting-state fMRI data
- Existing algorithms comparison for 3D Mapping and Tracking (Python and ROS)
  - Compared performance of PTAM and DTAM algorithm for different dataset
- SLAM using Recursive Bayesian Filter (Python and ROS) git link
  - Used Global image descriptor for image matching score
  - Used image matching score as observation likelihood in Bayes filter and Geometric verification for loop-closure nodes.
- Auto-pilot for Husky and Kingfisher Robots (Python and ROS) git link
  - Users can select any path using Google map and robot will follow that path with avoiding obstacles
- Computer vision course projects:
  - Motion estimation and tracking using optical flow
  - 3D structure estimation using stereo with a set of images
  - Homography estimation and structure from motion
  - Depth map reconstruction from shading in three images

SEP-2014
NOV-2012

SOFTWARE ENGINEER
Samsung R&D Institute, *Dhaka, Bangladesh*

- Designed and Implemented Android Benchmark Application(Java, OpenGL)
  - Designed project architecture
  - Implemented I/O, 2D graphics and 3D graphics testing part
  - Implemented leader-board in order to see the results
- Android Remote Access Application(Java)
  - Implemented the Android application for the remote phone
- Developed several Applications for Tizen Phone (www.tizen.org)(C++)
- Developed Tizen Gear App(HTML, Javascript, jQuery)
- Sound Engine Prototyping for Tizen OS(C++)
- Implemented my own Idea: Human fingertip detection, tracking and gesture recognition (Matlab)
- Developed Unit test cases for Tizen Native API(C++)

OCT-2012
JAN-2010

Android and Web Developer

Omicron-IT, Dhaka, Bangladesh

- Developed several websites using MySql, php, html, css, javascript, jquery
- Designed and developed following Android Applications:
  Google Play Sore Link Salesman Game, Tourist Assistant, Location Quiz, Ultimate Converter

Education

Current
SEP 2014

M.Sc. (Thesis Based) in Computing Science, CGPA: 3.7/4.0
Expected Completion: October, 2016
University of Alberta, Edmonton, Canada
Coursework: Machine Learning, Robotics, Probabilistic Graphical Model, Computer Vision, Reinforcement Learning,Teaching and Research Methods

Master's Thesis (Computer Vision and Robotics): Proposed a new algorithm for SLAM and multi-robot map merging (submitted paper at ICRA), project demo, Implemented using Python, Matlab, (git source code)

- Sparse difference Matrix using Approximate Nearest Neighbor and sequence matching
- Real time algorithm for SLAM and Map merging
- Better performance than SeqSLAM algorithm, a successful algorithm for visual SLAM

OCT-2012
JAN 2009

B.Sc. in Computer Science and Engineering, CGPA: 3.85/4.0
Islamic University of Technology, Gazipur, Bangladesh
Undergrad Thesis: System Input Using Marker Based Hand gesture recognition (Project Demo)

Scholarships and Certificates

2009 OIC Scholarship for Full Free Undergraduate studies at Islamic University of Technology.
2006 Board Scholarship for excellent result in 12^{th} grade public exam.

Volunteer

- Developed IUT-4th National ICT FEST's website, using html, css, php and mySql
- Arranged programming workshops at Samsung R&D Institute Bangladesh.
- Conducted Linux training at Samsung R&D Institute Bangladesh for the new Interns.
- Organizing member of IUT-4th National ICT FEST 2012, where 2000+ people turned out.

Workshops

- Demonstrated Auto-pilot project in NSERC Canadian Field Robotics Network (NCFRN) Field Trial 2015.
- Attended several Programming workshop from Islamic University of Technology Computer Society (IUTCS).

References are available upon request.