Chucai Yi

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Summary

Broad experience of developing large-scale intelligence systems.
Solid background in computer vision and machine learning fields.
Excellent programming and software development skills.
Good team player.

Experience

Google DayDream

Mountain View, U.S.A

Software Engineer — *Jan. 2018 -*

Google ARCore (formerly Google Tango)

- Improved pinhole camera model by adding skewness parameter for camera calibration. (camera models, projective geometry, c++)
- Implemented sensor (camera and IMU) functionaltiy test to certify that an Android device is eligible for ARCore. (Android, JUnit, JNI, c++)

HERE North America (Formerly as NAVTEQ) LLC

Chicago, U.S.A

Senior Research Engineer — *Jul. 2015 - Jan. 2018*

Automated building of high definition (HD) mapping

- Designed and implemented algorithms of building HD road geometry from 3D Lidar point clouds and 2D perspective images. (c++, boost, opencv, pcl)
- Designed and implemented an end-to-end system that flexibly integrated diverse modules and transparently provided I/O, exceiption handling, multi-threading, logging, etc. (python, c++, cmake, aws-ec2, aws-s3, unit and integration tests)
- Implemented projection between 3D Lidar points into 2D perspective image pixels. (c++, geo-coordinate conversion, camera projection)
- Implemented an evaluation module that automatically compared the built HD roads from our system with the ground truth roads from map database. (c++, java)

Amazon Corporate LLC

Seattle, U.S.A

Software Engineer in Computer Vision — *Aug. 2014 - Jun. 2015*

Camera surveillance system for smart and low-cost monitoring of warehouses.

- Designed and implemented light-weight algorithm of extracting 2D barcodes from natural scene image with cluttered background. (python, opencv, svm learning, system test)
- Designed camera naming scheme and provided APIs to simplify the registration of cameras in a distribution surveillance system with more than 30,000 cameras. (python, java)
- Involved in the design and implementation of an application ”camera anomaly detection” based on the surveillance system. (distribution system design, database design, unit and integration tests)

Media Lab, The City College of New York

New York, U.S.A

Research Assistant — *Aug. 2009 - Jun. 2014*

Research in the fields of computer vision and machine learning

- Designed and implemented algorithms of text information detection and recognition from natural scene image with unknown text patterns and cluttered background. (c++, python, matlab, opencv, caffe, tensorflow)
- Designed and implemented algorithms of surveillance event detection and recognition from large-scale data of surveillance videos. (c++, python, machine learning)
- Developed a blind-assistant navigation and recognition system to help blind or visually-impaired people for way-finding and hand-held object recognition. (c++, machine learning)

IBM Research

Beijing, China

Summer Research Intern — *May. 2013 - Aug. 2013*

Social media user personality Profiling

- Developed an application to collect tweet-style social media data and establish user profiles, for helping commercial banks pursue high-quality customers. (python, data cleansing)
- Developed supervised learning framework to predict user personalities from their tweets as observation data. (Adaboost learning)

Digital Video Communication Center, Huazhong University of Science and Technology

Wuhan, China

Software Engineer

Sep. 2006 - Feb. 2009

Computer aided tool for user interface design of TV Set-Top Box

- Developed an application for computer-aided design of user interface of TV Set-Top box. (c++, xml, json)
- Involved in the development of a Windows-based emulator for TV set-top box. (c++, windows sdk)

Award and Honor

2nd Place, Robust Reading Competition on Scene Text Detection, organized by International Conference on Document Analysis and Recognition. http://robustreading.opendfki.de/ *2011*

3rd Place, Surveillance Event Detection Competition of TREC Video Retrieval Evaluation (TRECVID), organized by National Institute of Standard and Technology. http://www-nlpir.nist.gov/projects/tv2012/tv2012.html *2012*

Science Fellowship, The Graduate Center, City University of New York. *2009 - 2013*

Manuscript Reviewer, IEEE Transactions on Image Processing, Elsevier Pattern Recognition, Elsevier Computer Vision and Image Understanding, SPIE Optical Engineering, Multimedia Application and Tools, etc. *2010 -*

Publication

Published more than 20 publications in top academic journal and conference with more than 1000 citations.
https://scholar.google.com/citations?user=sxudyyQAAAAJ&hl=en

Education

The Graduate Center, City University of New York

New York, U.S.A

Ph.D. Degree in Computer Science

Aug. 2009 - Jun. 2014

GPA 3.77/4.0

- Thesis: Text Extraction From Natural Scene: Methodology and Application
- Advisor: Prof. YingLi Tian, http://www-ee.ccny.cuny.edu/wwwn/yltian/home.html

Huazhong University of Science and Technology

Wuhan, China

Master Degree in Communication and Information Engineering

Sep. 2007 - Jun. 2009

GPA 81/100

- Thesis: Identity Recognition Based On Human Motions
- Advisor: Prof. Hongyuan Wang

Huazhong University of Science and Technology

Wuhan, China

Bachelor Degree in Communication Engineering, Department of Electronics and Information Engineering

Sep. 2003 - Jun. 2007

GPA 87/100