

Chenguang Zhang

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SUMMARY

Master of Science with strong programming, analytic skills. Have a wide range of project experience including full-stack web application development, machine learning as well as embedded programming. 3+ years of programming and debugging experience for scientific research.

EDUCATION

University of Massachusetts, Amherst

Master of Computer Engineering; GPA: 3.4/4.0

Amherst, MA

Sept 2017 - Sept 2020(expected)

Shandong University of Technology

Bachelor of Electrical Engineering & Automation; GPA: 3.7/4.0

Shandong, China

Sept 2013 - Jul 2017

SKILLS

Programming Languages: Python, Java, MATLAB, SQL, Golang, JavaScript, HTML/CSS

Technologies: Android, Linux, Git, MySQL, MongoDB, Google Cloud, AWS, Object-oriented Design, \LaTeX , Java Servlet, React

Libraries: TensorFlow, Keras

WORK EXPERIENCE

Teaching Assistant, Trustworthy Computing

UMass Amherst, ECE544

Amherst, MA, United States

Sep 2019 - Jan 2020

- A course covering algorithms and protocols underlying network security applications, encryption, digital signatures, and key exchange.
- Responsible for holding office hours and offering coding instruction on project section.

Software Engineer, Deep Learning, Internship

Institute of Automation, Chinese Academy of Science

Beijing, China

May 2018 - Aug 2018

- Worked on a team of ten responsible for design and implement computer vision based segmentation algorithms.
- Tracked and summary state-of-art object detection scientific papers. Verify and implement the algorithm in selected paper.
- Designed and implemented a image based measurement algorithm with OpenCV for lymphedema patient. The algorithm has been issued as a Chinese patent.
- Team ranked 3 in Baidu Gemstone Competition among over 1000 teams. Implemented and trained Deformable Conv-Net on MXNet using competition dataset. Achieved 0.8864 mAP on object detection.

PROJECTS

Perception System for Visually Impaired based on Android (Java, Tensorflow lite): Master's Thesis

- An object detection and distance estimation system deployed on **Android** devices and operated offline on device in real time based on TensorFlow Lite
- Implement and trained SSD /w MobileNet detector using Tensorflow object detection API on **Google Cloud** using personalized dataset
- Designed an algorithm to estimate user distance to detected object with single-camera
- Implement the interactive Android application with accessibility feature

EventAround: Java Web Service(Full-stack development): github.com/isaaczhang19/EventAround.git

- A dynamic web page for users to search nearby events with personalized recommendation(based on search history)
- Created Java servlets with **RESTful** APIs to handle HTTP requests and responses
- Implemented user authentication and authorization for signup and login. Captured and stored events data using relational database(**MySQL**)
- Designed an interactive web page with **AJAX** technology (HTML, CSS and JavaScript)

Geo-index and Image Recognition based Social Network (Golang): github.com/isaaczhang19/Geo-based-Social-Network.git

- A web service using **Go** to handle posts and deployed to Google Cloud for better scaling
- Provided geo-location based search functions using Elasticsearch on Google Computer Engine
- Performed offline analysis using BigQuery to get more business insights (keyword based)
- Integrated a face detection model with Google Machine Learning Engine

Secure Instant Messaging (Java, Socket): [Final report](#)

- Built an instant messaging system including a message server and Java client which support user authentication and sign up.
- Implemented Kerberos three server authentication system.
- Implemented AES-128, RSA and Diffie-Hellman key exchange security protocol.

Quadrotor Drone Design (C, ARM):

- Developed flight control system based on ARM STM32F103.
- Implemented PID control algorithm on STM32. Implemented Kalman filter when reading data from magnetometer sensor while calibrated accumulative magnetic departure.

ADDITIONAL HONORS & ACHIEVEMENTS

- China National Scholarship(top 0.2%) [Link](#)
- Meritorious Winner in COMAP's Mathematical Contest in Modeling(top 8%) [Link](#)