XIWEN LI

xiwen.li@utah.edu • 592 E 200 S #628, Salt Lake City, 84101 • (812) 239–7098

GitHub: www.github.com/lix4 • **Personal Website**: https://lix4.github.io/ • **LinkedIn**: https://www.linkedin.com/in/xiwen-li-17872ba5/

EDUCATION

University of Utah *Aug 2020 – Present*
Doctor of Philosophy, Computer Science **GPA: 3.8 / 4.0**

Washington University in St. Louis, St. Louis, MO (WUSTL) *Aug 2018 – May 2020*
Master of Science, Computer Science **GPA: 3.7 / 4.0**

- *Courses: Computer Vision, Nonlinear Programming, Geometric Computing for Biomedicine, Advances in Computer Vision*

Rose-Hulman Institute of Technology, Terre Haute, IN (RHIT) *Aug 2014 – May 2018*
Bachelor of Science, Computer Science

- *Courses: Android App Development, Web App Programing w/ Angular, Introduction to Database, Introduction to Web programming*

PUBLICATIONS

- **Real-Time Idling Vehicles Detection Using Combined Audio-Visual Deep Learning** (**Xiwen Li**, Tristalee Mangin, Surojit Saha, Evan Blanchard, Dillon Tang, Henry Poppe, Ouk Choi, Kerry Kelly, Ross Whitaker), International Conference on Intelligent Traffic and Transportation (ICITT 2023)**,** Acceptance Rate: *50% , Best Oral Presentation Award*
- **P-CapsNet: A General Form of Convolutional Neural Networks** (Zhenhua Chen, **Xiwen Li**, Chuhua Wang, David Crandall), preprint

RESEARCH EXPERIENCE

Research Assistant, Salt Lake City, UT *May 2021 – Present*
Research Assistant

Audio-Visual Idling Car Detection
- Defined a novel idling car detection problem and proposed a model to solve it
- Collected and labeled a real-world audio-visual car idling status dataset
- Built a audio-visual deep learning network and performed experiments on dataset
- Deployed the algorithm along with system in real-world and achieved deployable accuracy
- Worked in an interdisciplinary team, coordinated work, and deployed the system

Indiana University Computer Vision Lab, Bloomington, IN *May 2019 – Jan 2020*
Research Intern

High-Rank Convolution Network
- Designed and prototyped high-rank tensor convolution/deconvolutional layers with accelerated computation using CUDA kernel and CAFFE.
- Designed and implemented a convolutional capsule network for image classification and tested it on MNIST, Cifar10 and Cifar 100.
- Experimented on proposed models using different hyper-parameters and structures.
- Studied generalization ability and correlation between weights of proposed model by visualizing loss and trained weight filters.

TECHNICAL STRENGTHS

Programming Languages: Python, Java, Matlab, C++, C, Scheme, JavaScript
Tools: Android Studio, Angular, TensorFlow, Caffe, OpenCV

PROJECTS

Rosebotics AI Challenge (Image Processing) *Jan 2018 – May 2018*
- Worked in a team to compete in ICRA 2018 DJI RoboMaster AI Challenge and won the technical proposals assessment.
- Developed a threshold based red light tracking algorithm using Python OpenCV for robot to track enemies in real-time and improved performance in indoor lighting condition with various parameters.
- Deployed the tracking script on Raspberry Pi and integrated with robot turret to form the integral attacking system.

Team Management and Analytics System (Frontend and Backend Development) *Sep 2017 – May 2018*
- Developed a team management web portal for School Chemical-Car Team using Google Cloud.
- Created low-fidelity and high-fidelity prototypes to confirm requirements with clients and to elicit additional requirements.
- Implemented user registration and login system using Firebase and applied ExpressJS to build middleware for CRUD operations.

Pet Lost and Found Android Application (Android Development) *Jun 2017 – May 2018*
- Designed and built account creation and login feature with email and Google credential.
- Developed user profile management mechanism and implemented an interactive interface for publishing posts.
- Connected the frontend with Google Firebase to perform CURD operations of data.

HONORS AMD AWARDS
- **International Student Scholarship, RHIT** — Aug 2014 – May 2018
- **Dean's List, RHIT** — Fall, Winter 2014 – 2015; Fall, Winter, Spring 2015 – 2016; Fall 2016 – 2017
- **Alpha Lambda Delta, RHIT** (top 10% students) — April 2015