

Yubo Shao

Ph.D. Candidate
Department of Computer Science
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RESEARCH INTERESTS

Mobile sensing, mobile computing, and machine learning along mobile system.

EDUCATION

Purdue University | West Lafayette, IN **Aug 2017 – Present**

Ph.D. in Computer Science
Advisors: He Wang, Ph.D. & Jianzhu Ma, Ph.D. & Pan Li, Ph.D.
GPA: 3.79/4.0

Purdue University | West Lafayette, IN **Aug 2017 – May 2021**

M.S. in Computer Science
GPA: 3.79/4.0

University of Minnesota – Twin Cities | Minneapolis, MN **Aug 2013 – May 2017**

B.S. with High Distinction
Double Major: Computer Science & Mathematics
GPA: 3.95/4.0

INDUSTRY EXPERIENCE

Software Engineer **May 2022 – Present**

Intuitive Surgical, Digital and Data Development group, California
Manager: Kelvin Chu
Mentor: Qunming Peng

Software Engineer Internship **May 2021 – Aug 2021**

Intuitive Surgical, Digital and Data Development group, California
Manager: Kelvin Chu
Mentor: Ke Meng

- Explore latest software and hardware technologies and build proof-of-concepts for next generation product solutions.
- Focus on Medical Device Connectivity, Internet of Things and Edge Analytics.
- Work with an existing device connectivity and data analytics pipeline to improve aspects of it.
- Analyze and improve the performance, scalability, reliability, usability, and security stability of currently developed systems.

PUBLICATION

[1] Shao, Y.; Zhao, K.; Cao, Z.; Peng, Z.; Peng, X.; Li, P.; Wang, Y.; Ma, J. MobilePrune: Neural Network Compression via ℓ_0 Sparse Group Lasso on the Mobile System *Sensors* 2022, 22, 4081.

[2] Shao, Y.; Yang, T.; Wang, H.; Ma, J. AirSign: Smartphone Authentication by Signing in the Air. *Sensors* 2021, 21, 104.

PATENT

[1] System architecture and method of authenticating a user, US20200265215A1

RESEARCH EXPERIENCE

Graduate Research Assistant

Aug 2017 – May 2020

Department of Computer Science, Purdue University

Advisor: He Wang, Ph.D. & Jianzhu Ma, Ph.D. & Pan Li, Ph.D.

Project 1: Smartphone Authentication System

- Designed and developed an in-air signature authentication system using in-built mobile sensors.
- Implemented a real-time data collection Android app and signature authentication system.

Project 2: Deep Convolutional Neural Networks for Human Activity Recognition

- Conducting research on compressed CNN Model for Human Activity Recognition along mobile system.

Undergraduate Research Assistant

Jan 2016 – Dec 2016

Department of Computer Science and Engineering, University of Minnesota

Advisor: Volkan Isler, Ph.D.

- Simulated micro-arm to catch apples using 3D depth camera through ROS and V-Rep.
- Implemented Octree structure to estimate the apple trees' volume with large points data set.

SELECTED PROJECTS

Canine Video Analysis Using Computer Vision

Aug 2020 – May 2021

- Worked on the *Elanco*'s project which applying computer vision to recognize animal behavior.
- Designed and developing a custom camera Android application.

Untouched App Control Using Doppler Effect

Jan 2020 – May 2020

- Implemented an Android App to recognize three different gestures by using doppler effect.

TakeTime Cross Mobile App

Sep 2015 – May 2016

Advisor: Daniel Challou, Ph.D.

- Designed and developed a time-management mobile app – TakeTime Cross.
- Developed frontend academic activities' page with HTML, CSS, JavaScript and AngularJS.

TEACHING EXPERIENCE

CS 240 Programming In C **Spring 2019, Summer 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022**

Head Graduate TA, led labs and developed test modules for homework, Purdue University.

Math 4428 Mathematical Modeling **Spring 2016**

Undergraduate paper grader, University of Minnesota.

Math 1151 Pre-Calculus II **Fall 2014, Spring 2015**

Homework programmer, University of Minnesota.

Peer Learning Consultant **Aug 2014 – May 2017**

Tutored students in Mathematics, Computer Science and Chinese, University of Minnesota.

SKILLS

Programming Languages

Java (Proficient), C/C++ (Proficient), MATLAB (Proficient), Python (Proficient), C# (Medium), Swift (Medium), Julia (Medium), HTML5 (Medium), CSS (Medium), JavaScript (Medium), SQL (Familiar), R (Familiar), SAS (Familiar)

Software & Tools

Android Studio, XCode, Jupyter Notebook, GitHub, Eclipse, OpenCV, LaTeX, UNIX/Linux, ROS

HONORS & AWARDS

Dean's List (four years), University of Minnesota (2013 – 2017)

Lando Scholarship, School of Mathematics, University of Minnesota (2016 – 2017)

Lando Scholarship, Department of Computer Science, University of Minnesota (2016 – 2017)

MAA-NCS Team Competition – 3rd Place (Nov. 2016)

MAA-NCS Team Competition – 9th Place (Nov. 2015)