

Renyuan Zhang (Leo)

Research Assistant
Department of Electrical and Computer Engineering
University of Arizona
Tucson, AZ 85721

Phone: (520) 878-8630
Email: ryzhang@email.arizona.edu
LinkedIn: <https://www.linkedin.com/in/zrmaker/>
GitHub: zrmaker

Summary of Qualifications

4+ years of research and engineering experience in the field of radar, automated driving and imaging.

Understanding of ADAS sensors such as radar, camera, sonar, GPS, IMU, and lidar.

Intensive experience in programming in MATLAB, C/C++, Python, R and engineering related languages in Windows and Linux environment.

A strong self motivating ability and dedication to promoting effective teamwork. A strong ability to lead a research team.

Skills

Programming:	Python, Mathworks® MATLAB, R, NI LabVIEW, C/C++/C#, JAVA.
RF & EM:	ANSYS EM suite and Keysight ADS.
Sensors:	Radar, LiDAR, CMOS, CCD, sonar, microphone and Microsoft Kinect.
Machine Learning:	SVM, ANN, CNN, RNN, k -NN, k -means, naive Bayes, decision tree and mixture model (Gaussian).
CAD & Production:	SOLIDWORKS, Autodesk AutoCAD and Adobe Creative Cloud (Photoshop, Illustrator, Premiere Pro).
Operating Systems:	Windows and Ubuntu.
Embedded Systems:	NI control and acquisition suites and Arduino.
Others:	Digital signal processing (DSP), imaging processing, Nvidia® CUDA, source control (git) and controller area network (CAN).

Publications

Journal Articles

R. Zhang and S. Cao, "Real-time Human Behavior Detection via CNN using mmWave Radar," *IEEE Sensors Letters*. (submitted 2018)

R. Zhang and S. Cao, "3D Imaging Millimeter Wave Circular Synthetic Aperture Radar," *Sensors*, vol. 17, no. 6, p. 1419, June 2017.

Proceedings

R. Zhang and S. Cao, "Support vector machines for classification of automotive radar interference," *2018 IEEE Radar Conference (RadarConf18)*, Oklahoma City, OK, 2018, pp. 0366-0371.

R. Zhang and S. Cao, "Compressed Sensing For Portable Millimeter Wave 3D Imaging Radar," *2017 IEEE Radar Conference (RadarConf)*, Seattle, WA, USA, May 2017, pp. 0663-0668.

R. Zhang and S. Cao, "Portable Millimeter Wave 3D Imaging Radar," *2017 IEEE Radar Conference (RadarConf)*, Seattle, WA, USA, May 2017, pp. 0298-0303.

Dissertation and Thesis

R. Zhang and K. Kieu, "Fiber Based Spectral Domain Optical Coherence Tomography: Mechanism and Clinical Applications," *University of Arizona*, 2015.

R. Zhang and C. Li, "Surface-Enhanced Raman Scattering Substrate Synthesis and Characterization", *Chongqing University*, 2013.

Professional Experience

Research Assistant at Department of Electrical and Computer Engineering
Advisor: Dr. Siyang Cao, *University of Arizona*.

2015 - Present

- Developing CUDA algorithms on radar signal processing.

- Researching on radar target clustering and classification.
- Achieved human behavior detection via CNN using micro-Doppler signatures by mmWave radar.
- Realized radar interference detection, classification and mitigation.
- Completed 3D imaging millimeter wave circular SAR

Sensor Engineer at TuSimple

Sept. 2017 - Mar. 2018

TuSimple LLC[®], Tucson, AZ.

- Developed and evaluated Autoliv[®] 77 GHz multi-mode radar ROS driver.
- Developed Bosch[®] 77 GHz long-range radar and mid-range radar ROS driver.
- Evaluated Delphi[®] 77 GHz electronic scanning radar.
- Finished Hokuyo[®] URG-04LX-UG01 Scanning Laser Rangefinder development and truck trailer monitor/filter project.
- Written industrial radar signal filtering and target recognition.

Research Assistant of Nonlinear Optics at College of Optical Sciences

2014 - 2015

Advisor: Dr. Khanh Kieu, *University of Arizona.*

- Developed and analyzed with hospitals using fiber based SD-OCT

Education

Ph.D. in Electrical and Computer Engineering

Aug. 2015 - Present

University of Arizona

Research interest: radar signal processing, automotive radar, micro-doppler signatures, radar imaging, CUDA on radar signal processing, machine learning on human behaviors using radar.

M.S. in Optical Sciences

Aug. 2013 - Aug. 2015

University of Arizona

Research interest: optical imaging, line CCD, optical coherence tomography.

B.S. in Optoelectronic Engineering

Sept. 2009 - June 2013

Chongqing University

Udacity Self-Driving Car Nanodegree

Oct. 2017 - Sep. 2018

Udacity