# Shaoxiong Yao

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## Education

**University of Michigan** — **Ann Arbor, MI**
*Bachelor of Engineering, Computer Science, GPA: 4.00/4.00* — *Sept. 2019–present*
Expect Graduation Time: May 2021

**Stanford University** — **Stanford, CA**
*Visiting undergraduate student, GPA: 4.30/4.30* — *June 2020–Aug. 2020*
Study convex optimization

**Shanghai Jiao Tong University** — **Shanghai, China**
*Bachelor of Engineering, Electrical and Computer Engineering, GPA: 3.89/4.00, Rank: 2/324* — *Sept. 2017–present*
Expect Graduation Time: Aug. 2021

## Research Experience

**Learning dynamics for linear deformable object motion planning** — **Ann Arbor, MI**
*Advisor: Prof. Dmitry Berenson* — *May. 2020–present*

- Used graph neural network to learn object deformation dynamics
- Integrated dynamics model with kinodynamics RRT

**Device-Free Indoor Localization and Tomography using RFID Tag Array** — **Ann Arbor, MI**
*Advisor: Prof. Alanson Sample* — *Sept. 2019–Aug. 2020*

- Implemented RF tomography model to build probabilistic heatmap
- Used variational autoencoder to enhance heatmap quality
- Achieved mean localization error 21.5cm moving user in 5.2mx6m room

**3D Localization with RFID Tag Array** — **Shanghai, China**
*Advisor: Prof. Xudong Wang* — *Aug. 2018–May. 2019*

- Use phase difference of tags to estimate orientation and location
- Achieved a mean localization error 10cm in 2m distance

## Teaching Experience

**Instructional Aid of ROB101 Instroduction to Computational Linear Algebra** — **Ann Arbor, MI**
*Instructors: Prof. Jessy W. Grizzle and Prof. Maani Ghaffari* — *Sept. 2020—present*

- Hold weekly office hours and grade assignments and exam papers
- Help to prepare course projects and design exam questions

**Teaching Assistant of Vv214 Linear Algebra** — **Shanghai, China**
*Instructor: Dr. Olga Danilikina* — *Feb. 2019–May. 2019*

- Prepared weekly recitation classes, slides available on github.
- Graded assignments and exam papers.

## Publication

Dianhan Xie, Daniel Weidman, Shaoxiong Yao, Aimin Tang, and Xudong Wang, "3D Passive Positioning Based on RFID Tag Array," in Proceeding of the 53rd International Conference on Communications (ICC), 2019.
Yang-Hsi Su, Jingliang Ren, Zi Qian, Shaoxiong Yao, Alanson Sample, "TomoID: Room Scale RFID Tomography for Indoor Localization", in submission to IMWUT 2020 August.

## Honors and Awards

- Dean's Honor List Fall 2019 in College of Engineering at the University of Michigan
- Jackson and Muriel Lum Scholarship at UM-SJTU Joint Institute (4/324)
- Excellent Undergraduate Scholarship (First class) by Shanghai Jiao Tong University
- Silver Medal (10%) in University Physics Competition of 2018

## Programming Skills

- Proficient programming skills using C++, Python, and JavaScript.
- Familiar with machine learning tools including PyTorch, sklearn.