

# Austin Xu

---

## CONTACT INFORMATION

Phone: (248) 402-3571  
Email: axu77@gatech.edu

<https://austinxu87.github.io/>

## RESEARCH INTERESTS

Interested in preference learning, ranking to learn, and, more generally, incorporating human preferences and ranking systems into traditional machine learning fields such as reinforcement learning and generative models. Broadly interested in studying human decision making and its impacts from an interpretable and mathematically grounded perspective.

## EDUCATION

**Georgia Institute of Technology**, Atlanta, GA

*Ph.D., Electrical and Computer Engineering*

Aug. 2019 – Present

Concentration: Digital Signal Processing and Machine Learning

GPA: 4.0

Advisor: Dr. Mark Davenport

**University of Michigan**, Ann Arbor, MI

*B.S.E, Electrical Engineering*, Summa Cum Laude

Sept. 2015 – May 2019

Concentration: Digital Signal Processing

GPA: 3.98

## INDUSTRY EXPERIENCE

**Sandia National Laboratories**

May 2018 - Aug. 2018

Undergraduate R&D Intern, Flight and Instrumentation Systems Group

Albuquerque, NM

- Developed features for GUI that communicates to FPGA and imaging array via SpaceWire/RMAP. Implemented modular design that incorporates hardware specific communication and file parsing. Optimized testing workflow for hardware changes, which enabled rapid future hardware prototyping. [C++, Qt Creator].
- Implemented internal image processing algorithm. Quantified algorithm accuracy under fixed point and floating point datatypes to determine hardware implementation viability. [Matlab].

**General Motors**

May 2017 - Aug. 2017

Student Intern, Automated Driving and Active Safety Group

Warren, MI

- Collaborated with GM and tier 1 supplier to develop and implement supply-chain-wide thermal validation plan for rear view camera coaxial cable. Validation plan was integrated for all future rear view cameras.
- Utilized internal software to de-warp rear view camera images to meet internal and government guidelines. Discovered discrepancy between test vehicle de-warping output and specifications, resulting in re-calibrated software update.

## TEACHING EXPERIENCE

**Graduate Teaching Assistant**

Aug. 2019 - Present

Professional and Technical Communications (ECE 3005) | *Georgia Institute of Technology*

- Individually consulted with 20+ undergraduate students to develop their technical communication skills. Provided constructive feedback on resumes, technical documents, and presentations.
- Interfaced with students during 15 hours of weekly office hours, graded assignments, and assisted with in-class activities.

**Instructional Aide**

Sept. 2018 - May 2019

Discrete Mathematics (EECS 203) | *University of Michigan*

- Interacted with groups of 20+ undergraduate students during weekly recitation section and office hours. Effectively answered questions, explained concepts, and solved guided practice problems. Achieved an instructor evaluation of 4.7/5.0.
- Managed group of 16 graders. Created weekly grading assignments and rubrics, proofread homework solutions, and enforced grading timeline.
- Created homework and exam problems in collaboration with 18 other staff members. Half of individually created exam problems were used on exams, which was highest rate among IAs.

## CONFERENCE PUBLICATIONS

[1] A. Xu and M. A. Davenport, "Simultaneous Preference and Metric Learning from Paired Comparisons", *Submitted*, June 2020

WORKSHOPS	<b>Gene Golub SIAM Summer School</b> African Institute for Mathematical Sciences (AIMS)   <i>Muizenberg, South Africa</i> <ul style="list-style-type: none"> <li>Selected as one of 30 global participants for the “Theory and Practice of Deep Learning” summer school. Postponed to July 2021 due to COVID-19 pandemic.</li> </ul>	July 2021
AWARDS	<b>President’s Fellowship</b>   Georgia Institute of Technology <b>Distinguished Academic Achievement Award</b>   University of Michigan <b>Outstanding Service Award, EECS Dept.</b>   University of Michigan <b>EECS Scholar</b>   University of Michigan <b>Eta Kappa Nu Scholarship</b>   University of Michigan <b>James B. Angell Scholar</b>   University of Michigan <b>William J. Branstrom Freshman Prize</b>   University of Michigan <b>Dean’s List/University Honors</b>   University of Michigan	Aug. 2019 Mar. 2019 Feb. 2018 Feb. 2018 April 2017 Mar. 2017 Mar. 2016 All Semesters
SERVICE	<b>Undergraduate Engineering Student Advisory Board (UESAB)</b> <i>Electrical Engineering Representative</i>   University of Michigan  <b>Eta Kappa Nu - Beta Epsilon Chapter</b> <i>Officer - Historian</i>   University of Michigan  <b>ECE Undergraduate Advising Office</b> <i>Peer Advisor</i>   University of Michigan  <b>STEM Society</b> <i>Laboratory Leader</i>   University of Michigan  <b>Eta Kappa Nu - Beta Epsilon Chapter</b> <i>Tutoring Chair</i>   University of Michigan	Sept. 2018 - May 2019  Sept. 2018 - Dec. 2018  Sept. 2017 - Dec. 2018  Sept. 2017 - Dec 2018  Jan. 2018 - May 2018