

Ajinkya K. Mulay

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SUMMARY

PhD student in ECE with 4+ years of experience leading and assisting research projects involving the design of algorithms in Privacy, Machine Learning and Wireless Communications

EDUCATION

PhD in Electrical and Computer Engineering

Purdue University

Aug 2018 – Present

West Lafayette, IN

- **Advisor:** Xiaojun Lin | **Current GPA:** 3.71/4
- Awarded a *Research Assistantship* to work with the *SuperPower* Group
- Awarded a **two-year ECE Teaching Assistantship**
- Active Member of *HKN (Eta Kappa Nu)* Honor Society Beta Chapter

Bachelor of Technology (with Honors) in Electrical Engineering

Indian Institute of Technology, Hyderabad

Aug 2014 – May 2018

Hyderabad, India

- **GPA: 8.88/10** | Graduated in **top 5%** of class
- Undergraduate Teaching Assistant

WORK EXPERIENCE

Graduate Research Assistant | *R, Python, PyTorch, RStudio, Git*

Psychological Sciences (SuperPower Group) at Purdue University

Aug 2020 – Present

West Lafayette, IN

- Designing algorithms to determine effects of parameter uncertainty on statistical power for multidimensional parameter spaces using ML simulations and search techniques
- Actively contributing and leading ideation, long-term strategy and development of **50%** of the project

Research Scientist | *PyTorch, PySyft, Git*

OpenMined

Apr 2020 – Present

West Lafayette, IN

- Actively leading a team of 2 research engineers in developing a benchmark suite of federated private ML algorithms to cut down research time; submitted supporting article to *NIPS 2020 Preregistration Workshop*
- Demonstrated common federated ML algorithms on **100+** virtual mobile devices with an accuracy of over **99%**

Graduate Teaching Assistant | *LTSpice, ispLEVER, Verilog*

ECE at Purdue University

Aug 2018 – Apr 2020

West Lafayette, IN

- Mentored **350+** students one-on-one and via office hours; supervised a team of **10+** undergraduate TAs
- Prepared assignments, solutions and supplementary material for 2 courses to aid student understanding

Undergraduate Student Researcher | *MATLAB*

Indian Institute of Technology, Hyderabad

Aug 2017 – Apr 2018

Hyderabad, India

- Developed an algorithm to reduce interference between eLAA-WiFi networks by at least **40%** using game theory
- Demonstrated empirical evidence of the said schemes using MATLAB simulations; successfully published the results in *IEEE Networking Letters*

Research Internship | *Golang, Arduino, Linux*

University of Tokyo

May 2017 – July 2017

Tokyo, Japan

- Slashed the packet drop rate over a 3G IoT-Cloud network by **99%** through a self-developed dynamic ping-pong connection management algorithm
- Successfully published the results in the *ACM/IEEE UCC Conference* held in Austin, TX

PEER-REVIEWED PUBLICATIONS

- DFC: Dynamic UL-DL Frame Configuration for Improving Channel Access in eLAA, A. Mulay, A. Basawade, B. Tamma & A. Franklin, **IEEE Networking Letters**
- IoT WebSocket Connection Management Algorithm for Early Warning Earthquake Alert Applications, A. Mulay, H. Ochiai & H. Esaki, **ACM/IEEE UCC, Austin, TX, USA**

TECHNICAL SKILLS

Languages: Python, C++, R, Golang, Javascript

Frameworks: Node.js, PyTorch

Developer Tools: Git, PyCharm, RStudio, Jupyter, Arduino

Libraries: NumPy, PySyft, Pandas, Matplotlib

ACHIEVEMENTS

- *Winner and World Finalist* for Emergensor at the *Microsoft Imagine Cup - Japan National Final, 2017*
- Special recognition for *young team* and **8th** rank globally in *IEEE Signal Processing Cup, 2016*