# Ameya Daigavane

235 Albany Street, Ashdown House 5113A, Cambridge, MA
Phone: +1-(857)5077253
Email: ameya.d.98@gmail.com
Github : ameya98


## Education

- **Massachusetts Institute of Technology** — Cambridge, MA
  *PhD in Electrical Engineering and Computer Science (GPA 5.0/5.0)* — *2022-Current*
  - Research Assistant in the Atomic Architects group led by Prof. Tess Smidt.
- **Indian Institute of Technology, Guwahati** — Guwahati, India
  *B.Tech in Computer Science and Engineering (GPA 9.38/10.0)* — *2016-2020*

## Experience

- **Pre-Doctoral Researcher - Google Research** — Bangalore, India
  *Mentors: Dr. Gaurav Aggarwal and Dr. Prateek Jain* — *September 2020 - August 2022*
  - Designed node-level differentially-private graph neural networks.
  - Developed interactive visualizations for microplate experiments.
- **Research Intern - NASA, Jet Propulsion Laboratory** — Pasadena, CA
  *Mentor: Dr. Gary Doran* — *June 2020 - August 2020*
  - Designed, prototyped and assessed radiation sensitivity of time-series anomaly detection methods in a flight system setting.
- **Research Intern - NASA, Jet Propulsion Laboratory** — Pasadena, CA
  *Mentor: Dr. Kiri Wagstaff* — *May 2019 - July 2019*
  - Developed unsupervised algorithms for onboard event detection in time-series data for the Plasma Instrument for Magnetic Sounding on the upcoming Europa Clipper mission.
- **Research Intern - Indian Institute of Science** — Bangalore, India
  *Mentor: Prof. Aditya Gopalan* — *May 2018 - July 2018*
- **Research Intern - Indian Institute of Technology, Gandhinagar** — Gandhinagar, India
  *Mentor: Prof. Shanmuganathan Raman* — *May 2017 - July 2017*

## Publications

- **Symphony: Symmetry-Equivariant Point-Centered Spherical Harmonics for Molecule Generation**
  *Ameya Daigavane, Song Kim, Mario Geiger, and Tess Smidt.*
  Accepted at ICLR, 2024.
- **Learning Integrable Dynamics with Action-Angle Networks**
  *Ameya Daigavane, Arthur Kosmala, Miles Cranmer, Tess Smidt, and Shirley Ho.*
  Presented at Machine Learning and the Physical Sciences at NeurIPS, 2022.
- **Unsupervised Detection of Magnetic Field Boundary Crossings From Plasma Spectrometer Data**
  *Ameya Daigavane, Kiri Wagstaff, Gary Doran, Corey Cochrane, Caitriona Jackman, and Abigail Rymer.*
  Published at Computers and Geosciences, 2022.
  Invited talk at ML for Planetary Science and Space Physics and ML in Heliophysics.

- **Resource Consumption and Radiation Tolerance Assessment for Data Analysis Algorithms Onboard Spacecraft**
  *Gary Doran, Ameya Daigavane, and Kiri Wagstaff.*
  Published at IEEE Transactions on Aerospace and Electronic Systems, 2022.

- **Integrating Deep Learning and Unbiased Automated High-Content Screening to Identify Complex Disease Signatures in Human Fibroblasts**
  *Lauren Schiff, et al.*
  Published at Nature Communications, 2022.

- **Node-Level Differentially Private Graph Neural Networks**
  *Ameya Daigavane, Gagan Madan, Aditya Sinha, Abhradeep Thakurta, Gaurav Aggarwal, and Prateek Jain.*
  Accepted for oral presentation (one of four papers) at PAIR$^2$Struct at ICLR, 2022.

- **Understanding Convolutions on Graphs**
  *Ameya Daigavane, Balaraman Ravindran, and Gaurav Aggarwal.*
  Published at Distill, 2021.

- **Interactive Media for Understanding ML Methods: A Case-Study on Graph Neural Networks**
  *Ameya Daigavane, Balaraman Ravindran, and Gaurav Aggarwal.*
  Presented at Rethinking ML Papers at ICLR, 2021.

- **Detection of Environment Transitions in Time Series Data for Responsive Science**
  *Ameya Daigavane, Kiri Wagstaff, Gary Doran, Corey Cochrane, Caitriona Jackman, and Abigail Rymer.*
  Accepted for oral presentation (one of five papers) at MiLeTS at KDD, 2020.

## Awards and Honours

NSF Graduate Research Fellowship Award . . . . . 2023
MIT SERC Scholar Award . . . . . 2022
ACM SIGBED Scholars Award – One of three awardees . . . . . 2020
ACM SIGKDD Student Registration Award . . . . . 2020
Caltech Summer Undergraduate Research Fellowship (SURF) Award . . . . . 2019
ACM ICPC Qualifiers – 61$^{st}$ in India among 4000+ teams . . . . . 2019
ACM ICPC Kanpur Regionals – 18$^{th}$ in India among 200+ teams . . . . . 2019
OzCHI Student Design Challenge – Honorable Mention (Top 5) . . . . . 2019
Outstanding (AS) Grade in 10 courses across CS and Math . . . . . 2016-2020
Analyze This – Outstanding Performer – 55$^{th}$ in India among 2000+ teams . . . . . 2017
KVPY Science Scholarship – SA Stream – 156$^{th}$ in India . . . . . 2015
FIITJEE Talent Reward Examination – 1$^{st}$ in India . . . . . 2014
Regional Mathematics Olympiad – 1$^{st}$ in state . . . . . 2014

## Volunteering

- **English on Call**: Taught English to economically disadvantaged students.
- **SHINE Youth4Jobs**: Mentored differently-abled participants on time, emotion, and career management.
- **EECS GAAP**: Mentoring students from underrepresented backgrounds on graduate school applications.