


Ameya Daigavane

#202/2, Laughing Waters, Whitefield, Bangalore, India
Phone: +91-9731154415

User ID: ameya.d.98@gmail.com
Github : ameya98

Education

- **Indian Institute of Technology, Guwahati** Guwahati
B.Tech in Computer Science and Engineering 2016-2020
 - Major GPA 9.38/10, with a Minor in Mathematics (Minor GPA 10/10).

Experience

- **Pre-Doctoral Researcher - Google Research** Bangalore
Mentors: Dr. Gaurav Aggarwal and Dr. Prateek Jain September 2020 - Current
 - Designing differentially-private graph neural networks.
 - Researching interactive techniques for visualizing microplate experiments.
- **Research Intern - NASA, Jet Propulsion Laboratory** Pasadena
Mentor: Dr. Gary Doran, Machine Learning and Instrument Autonomy 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
Mentor: Dr. Kiri Wagstaff, Machine Learning and Instrument Autonomy May 2019 - July 2019
 - Explored unsupervised algorithms for onboard event detection in time-series data for the Plasma Instrument for Magnetic Sounding on the upcoming Europa Clipper mission.
 - Developed a novel extension of the matrix profile for the discovery of anomalous subsequences in multidimensional time-series.
- **Research Intern - Indian Institute of Science** Bangalore
Mentor: Prof. Aditya Gopalan, Dept. of ECE May 2018 - July 2018
- **Research Intern - Indian Institute of Technology, Gandhinagar** Gandhinagar
Mentor: Prof. Shanmuganathan Raman, Dept. of EE May 2017 - July 2017

Publications





- **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.
Accepted 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 PAIR²Struct, 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.
Accepted for poster presentation at Rethinking ML Papers, 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, KDD - 2020.
- **2-uniform Words: Cycle Graphs, and a Algorithm to Verify Word-Representations of Graphs**
Ameya Daigavane, Mrityunjay Singh, and Benny K. George.
Accepted for presentation at Workshop on Words and Complexity, 2018.

Awards and Honours

ACM SIGBED Scholars Award – One of three undergraduates awarded	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

Selected Open-Source Contributions

- **Magnetic Field Boundaries in Cassini Plasma Spectrometer Data**
Caitriona Jackman, Michelle Thomson, Michele Dougherty and Ameya Daigavane. 
- **ogbg-molpcba** Molecular activity prediction with graph neural networks in JAX
Ameya Daigavane and Thomas Kipf. 
- **fmga** Derivative-free objective function maximization with parallelized genetic algorithms
Ameya Daigavane. 70+ stars on 
- **densratio_py** α -Relative probability density ratio estimation with RuLSIF
Koji Makiyama and Ameya Daigavane. 100+ stars on 

Community Volunteering

- **English on Call:** Taught English to economically disadvantaged students.
- **SHINE Youth4Jobs:** Mentored differently-abled participants on time, emotion, and career management.