


Ameya Daigavane

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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

- **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.
- **Integrating Deep Learning and Unbiased Automated High-Content Screening to Identify Complex Disease Signatures in Human Fibroblasts**
Lauren Schiff, et al.
Accepted at Nature Communications, 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.
- **Time-Series Analysis Methods for Onboard Detection of Magnetic Field Boundaries by Europa Clipper**
Ameya Daigavane, Kiri Wagstaff, Gary Doran, Corey Cochrane, Caitriona Jackman, and Abigail Rymer.
Accepted for poster presentation at Second AI and Data Science Workshop for Earth and Space Sciences, 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.





Publications under review:

- **Node-Level Differentially Private Graph Neural Networks**
Ameya Daigavane, Gagan Madan, Aditya Sinha, Abhradeep Thakurta, Gaurav Aggarwal, and Prateek Jain.
- **Unsupervised Detection of Magnetic Field Boundary Crossings From Plasma Spectrometer Data**
Ameya Daigavane, Kiri Wagstaff, Gary Doran, Corey Cochrane, Caitriona Jackman, and Abigail Rymer.
- **Resource Consumption and Radiation Tolerance Assessment for Data Analysis Algorithms Onboard Spacecraft**
Gary Doran, Ameya Daigavane, and Kiri Wagstaff.

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. 90+ stars on 

Community Contributions

- **English on Call** Taught fifteen classes of basic English to disadvantaged children.
- **SHINE Youth4Jobs** Mentored differently-abled youth on time, emotion, stress and career management.