# Ameya Daigavane

#202/2, Laughing Waters, Whitefield, Bangalore, India

Email: ameya.d.98@gmail.com Phone: +91-9731154415 Github (7: 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**

• 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
ACM SIGKDD Student Registration Award
Caltech Summer Undergraduate Research Fellowship (SURF) Award
ACM ICPC Qualifiers – 61 <sup>st</sup> in India among 4000+ teams
ACM ICPC Kanpur Regionals – 18 <sup>th</sup> in India among 200+ teams
OzCHI Student Design Challenge – Honorable Mention (Top 5)
Outstanding (AS) Grade in 10 courses across CS and Math
Analyze This – Outstanding Performer – 55 <sup>th</sup> in India among 2000+ teams
KVPY Science Scholarship – SA Stream – 156 <sup>th</sup> in India
FIITJEE Talent Reward Examination – 1 <sup>st</sup> in India
Regional Mathematics Olympiad – 1 <sup>st</sup> in state

### **Selected Open-Source Contributions**

•	Magnetic Field Boundaries in Cass	sini Plasma Spectrometer Data	
	Caitriona Jackman, Michelle Thomson	n, Michele Dougherty and Ameya Daigavane.	8
•	ogbg-molpcba	Molecular activity prediction with graph neural netw	orks in JAX
	Ameya Daigavane and Thomas Kipf.		
•	fmga Derivative-free ol	bjective function maximization with parallelized genetic	algorithms
	Ameya Daigavane.	70+	stars on 🗘
•	densratio_py	lpha-Relative probability density ratio estimation v	vith RuLSIF
	Koji Makiyama and Ameya Daigavane	e. 90+	stars on 🗘

# **Community Contributions**

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