

# Milind Agarwal

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Updated May 25, 2022

<https://milind-agarwal.github.io/>

## EDUCATION

### George Mason University

Ph.D. in Computer Science

*Research Advisor: Antonis Anastasopoulos*

Aug 2022 - *present*

GPA: -

### Johns Hopkins University

MSE in Computer Science

*Election to Upsilon Pi Epsilon - CS Honor Society*

Aug 2019 - May 2021

GPA: 3.89

### Johns Hopkins University

BS in Computer Science

*Additional Major: Applied Mathematics & Statistics*

Aug 2017 - May 2021

GPA: 3.77

## RESEARCH EXPERIENCE

### Natural Language Processing and Machine Learning

- **Low-Resource Machine Translation** Summer 2020  
*Advisor: Prof. David Yarowsky, JHU*
  - Pronoun Discovery in over 1800 languages  
Constructed a lexical database of pronouns indexed by cross-lingual dimensions of meaning
  - Universal Grapheme to Phoneme (GTP) Toolkit  
Programmed toolkit to bidirectionally convert phonemes for the GTP project
- **VowPal Wabbit, Microsoft Research** Summer 2020  
*Mentor: Marco Rossi, Principal Data Scientist*
  - Contextual Bandit Data Visualization  
Built a visualization library to understand contextual bandit policies and logs
- **COVID-19 Chatbot, Johns Hopkins CLSP** Spring 2020  
*Advisors: Prof. Joao Sedoc, Adam Poliak*
  - QA Data Collection Effort  
Scraped medical websites for the QA Data Collection Effort and COVID-19 Chatbot

### Computational Biology and Genomics

- **Exome Data Analysis Software** Summer 2019  
*Advisor: Prof. Janet Markle, Johns Hopkins*
  - WebSeq: Genomic Sequencing Analysis Portal  
Developed a robust pipeline to conduct whole exome sequencing analyses
- **Multiview Computational Genomics** Academic Years 2018-2020  
*Advisor: Prof. Alexis Battle, Benj Shapiro*
  - Multiview Visualization  
Designed visualizations for multi-view data to better understand complex data relationships
  - Genomic Data Analysis  
Analyzed a multiview breast cancer dataset to better classify breast cancer subtypes
- **Seizure Visualization Software** Summer 2018  
*Advisor: Dr. Nathan Crone, JHU Neurology*

- Epileptic Seizure Tracker and Visualizer  
Developed a visualization tool to identify seizure patterns from Apple Watch data

**PEER-REVIEWED PAPERS** **Milind Agarwal.** *Are We There Yet? – Building an equitable future with low-resource and endangered language research.* NeurIPS 2021. QinAI Workshop.

Adam Poliak, Max Fleming, Cash Costello, Kenton W Murray, Mahsa Yarmohammadi, Shivani Pandya, Darius Irani, **Milind Agarwal**, Udit Sharma, Shuo Sun, Nicola Ivanov, Lingxi Shang, Kaushik Srinivasan, Seolhwa Lee, Xu Han, Smisha Agarwal, João Sedoc. *Collecting Verified COVID-19 Question Answer Pairs.* EMNLP 2020 Workshop NLP-COVID . [[Paper](#)][[Poster](#)]

**PRESENTATIONS AND POSTERS** **Milind Agarwal**, Paul Mineiro, Marco Rossi. *Contextual Bandit Data Visualization with VowPal Wabbit.* Presentation at NeurIPS. Dec 2020.[[Slides](#)]

**Milind Agarwal**, Alexis Battle. *Multiplotlib: a python library for multi-view data visualization.* Poster Presentation at Richard Tapia Conference. Sept 2020. [[Poster](#)]

**Milind Agarwal**, Janet Markle. *Web-Based Analytics for Genomic Data.* Poster Presentation at Johns Hopkins CARES Symposium. August 2019. [[Poster](#)]

**PREPRINTS** **Milind Agarwal**, Rayz Ghmire, Janet Markle. *WebSeq: A Genomic Data Analytics Platform for Monogenic Disease Discovery.* [[Paper](#)]

**TEACHING EXPERIENCE** **Juni Learning** July 2021 - present  
*Computer Science Instructor*  
Teaching Python fundamentals, data visualization, algorithms, and machine learning to middle-school, high-school, and college students

**Discrete Mathematics, Applied Math and Statistics Department, JHU**  
*Teaching Assistant* - Spring 2019 (Dr. Fred Torcaso)  
*Teaching Assistant* - Fall 2018 (Dr. Beryl Castello)  
*PILOT Leader* - Fall 2017 (Dr. Beryl Castello)

**RESEARCH AWARDS** **Best Project Award, Intuitive Surgical** Fall 2020  
*Project: Self-supervised Contrastive Image Classification with Image Sentences*

**Microsoft Open Source Fest Award** Summer 2020  
\$10000 funding by Microsoft to conduct research work on VowPal Wabbit  
*Project: Contextual Bandits Data Visualization using VowPal Wabbit*

**Joseph C. Pistrutto Research Fellowship** Academic Year 2019-2020  
\$6000 grant by JHU Dept. of Computer Science for data visualization research  
*Project: Visualization research for multi-view data (Battle Lab)*

**Provost Undergraduate Research Award** Summer 2019  
\$4000 research award to fund summer research at Markle Lab, BSPH.  
*Project: Developing WebSeq to find genetic causes of rare autoimmune disorders (Markle Lab)*

**LINGUISTIC SKILLS** I genuinely enjoy learning languages and using them as a unique lens into the cultures and histories that they represent. I'm a native speaker of Standard Hindi. With the exception of the Devanagari script (for Hindi) and the Latin script, all other writing systems are self-taught.

Advanced/Native: Hindi (हिन्दी), Urdu (اردو), English, French

Intermediate: Punjabi (ਪੰਜਾਬੀ/پنجابی)

Novice: Telugu (తెలుగు), Persian (فارسی)

## SERVICE

### FairBytes

*Curriculum Development and Outreach*

Developing AI fairness and ethics curriculum for outreach to college students

July 2021- *present*

### Queer in AI, oSTEM

*Conference Social Organizer and Volunteer*

Organize social events at Queer in AI workshops to create community at AI conferences

June 2021- *present*

### Diversity and Inclusion Committee, JHU Computer Science

*Alumni Volunteer*

Discuss solutions to address admissions diversity and attrition at JHU's computer science department

June 2021

## MEMBERSHIPS

Queer in AI

Since Spring 2021

Out in Science, Technology, Engineering, and Mathematics (oSTEM)

Since Spring 2021

Access Computing for Students with Disabilities

Since Summer 2019

Upsilon Pi Epsilon - CS Honor Society

Since Fall 2019

## OTHER

### FELLOWSHIPS AND AWARDS

Advanced Language Processing School

Winter 2022

*(Co-organized by LIG - Univ. Grenoble Alpes and Naver Labs Europe)*

Princeton University Prospective PhD Preview Scholar

Fall 2021

ICML Diversity and Inclusion Fellowship

Summer 2021

Johns Hopkins Life Design Fellowship

Summer 2021

Dorothy F. Sheppard Award for Outstanding Service to JHU Residential Life

Spring 2021

oSTEM/Queer in AI Fellowship for Ph.D. Applications

Fall 2020

Richard Tapia Conference Scholarship

Summer 2020

ODSC (Open Data Science Conference) East 2020 Scholarship

Spring 2020

## OTHER

### EXPERIENCE

Resident Advisor

Academic Years 2019-21

Residential Advisory Board Director

Academic Years 2017-19

Flow Cytometry Assistant, JHU

Academic Year 2017-18

Featured Content Creator, JHU Admissions

Academic Years 2017-19