Keshav Ganapathy

Aspiring Computer Science Student & Machine Learning Enthusiast

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Education

University of Maryland **Jun. 2021 – May 2025**

Intended Bachelor of Science in Computer Science and Mathematics Minor: German *College Park, MD*

- **GPA:** 4.00/4.00
- **Relevant Coursework:** CMSC 132 Object-Oriented Programming II

Centennial High School **Sep. 2017 – May 2021**

High School Diploma *Ellicott City, MD*

- **Activities:** WebPoint (Co-Founder), Pyoneers (Founder and President), German Honor Society (President), Varsity Tennis (Captain), QuHacks 2020 (Organizer), HocoHacks 2020 (Vice President), FBLA (Vice President), Science in Society Conference (Organizer), Math Honor Society (Public Relations Officer)

Internship & Research Experience

University of Maryland **Summer 2020, Summer 2021**

Researcher as a part of REU-CAAR teams, Mentor: Tom Goldstein *College Park, MD*

Summer 2021:

The study conducted this summer was a continuation of the project from *Summer 2020*.

∗ Led a team in machine learning and statistics research.

Summer 2020:

∗ Selected out of 30 high school students to join an undergrad team to conduct machine learning and statistics research
∗ Analyzed the Machine Learning conference review process using many statistical tools, such as logistic regression models, and ANOVAs
∗ Created a data set of over 5000 conference papers using OpenReview API, Selenium, and web scraping tools
∗ Paper conclusions presented at the ICLR 2021 townhall and selected as a lightning talk at Navigating the Broader Impacts of AI Research NeurIPS 2020 Workshop
∗ Co-first author on paper accepted at the Navigating the Broader Impacts of AI Research NeurIPS 2020 Workshop

Johns Hopkins Applied Physics Laboratory **Jun 2020 – May 2021**

ASPIRE Intern, Mentor: Joshua McClellan *Baltimore, MD*

∗ Used the Ray python reinforcement learning library to run and develop learning scenarios
∗ Conducted Machine learning research under NDA
∗ Implemented a Kalman and Moving Average Filter for noise reduction and produced a research poster comparing the filter algorithms presented at the APL ASPIRE student showcase

Stony Brook University **Jun 2020 – October 2020**

Researcher, Simons Summer Research Program Admit, Mentor: Niranjan Balasubramanian *Stony Brook, NY*

∗ Developed and optimized software to measure sentence similarity to train a Neural Network for better performance
∗ Developed a deep Neural Networks for mechanism (explanation) classification in the biology sub-domain with a 92% MCC score

Johns Hopkins University **Nov 2019 – May 2020**

Researcher, Mentor: Kevin Duh *Baltimore, MD*

∗ Developer of Genetic Algorithm using *Numpy*, *Pandas*, and other python packages
∗ Published algorithm results

iZen **Summer 2019**

Intern *Palo Alto, CA*

∗ Developed text to speech programs using SSML, C#, and Google Cloud's Text to Speech AI to generate roughly 6 hours of educational content on Artificial Intelligence and Machine Learning

Blue Wave Semiconductors **Summer 2017, Summer 2018**

Intern *Ellicott City, MD*

* Led a group of interns to produce summaries of research papers on the topics of of chemical deposition and CVD diamond films, and helped to integrate the material into the company's Hot Filament Chemical Vapor Deposition (HFCVD) System
* Constructed and tested substrate heaters and produced test reports using Microsoft Word, Excel, and Powerpoint
* Took calls from potential investors, consumers, and product suppliers

Select Projects

Harmony | *Svelte, WebRTC, Web Audio API, CSS, peaks.js, HTML, Pug, SCSS, JavaScript* **February 2021**

- A web application that allows for near-synchronous collaboration for musical education.

BrainFun | *Brainf*ck, HTML, CSS, JavaScript, Vue.js, Firebase* **June 2020**

- A web application that teaches kids logical thinking via the esoteric programming language Brainf*ck.

View additional details and additional projects **ganapathy.ml/#projects**

Technical Skills

Languages: Python, Java, HTML/CSS, SSML, JavaScript, Pug
Developer Tools: VS Code, Eclipse, Jupyter Notebook, Atom
Technologies/Frameworks: Linux, macOS, Windows, GitHub, GitLab, Svelte

Publications & Preprints

Tran, D.[1], Valtchanov, A.[1], **Ganapathy, K.[1]**, Feng, R.[1], Slud, E., Goldblum, M., & Goldstein, T. (2020). Analyzing the Machine Learning Conference Review Process. NeurIPS 2020 Workshop on Navigating the Broader Impacts of AI Research. arXiv preprint arXiv:2011.12919.

Ganapathy, K[1]. (2020). A Study of Genetic Algorithms for Hyperparameter Optimization of Neural Networks in Machine Translation. arXiv preprint arXiv:2009.08928.

Presentations

"Kalman Filters for Noise Reduction". Johns Hopkins University Applied Physics Lab ASPIRE Program Student Showcase Lightning Talk, Baltimore, Maryland, May 2021.

Awards

- Recipient of the $10,000 AFCEA-CMD Merit Scholarship.
- Simons Summer Research Program 2020 Admit (8% Acceptance Rate)
- 2nd Place in Best Health Tech Hack at DefHacks Virtual 2020 (Over 1200 attendees)
- 1st (2020) & 3rd (2021) place at FBLA Regionals for Website Design, 2x State Qualifier. 4th Place Website Design FBLA State Conference, National Qualifier.
- 1st Place in Wolfram Programming at hackUMBC 2019 (Over 170 attendees)
- QuHacks - 1st Place in 2019, 2nd Place in 2018