Avi Gupta

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https://racecraftr.github.io

IMPORTANT LINKS

GitHub: https://github.com/racecraftr
LinkedIn: https://www.linkedin.com/in/avi-gupta-ag/
Blogs: https://medium.com/@savim2020 and https://medium.com/hackerlog
YouTube: https://www.youtube.com/channel/UCbfng4kyQt2QEzXktgCECDw
Personal Website: https://xinf.dev/

EDUCATION

Bachelor of Science, Computer Science **Expected Graduation: May 2028**
University of Maryland - College Park, MD

- Minor in Robotics and Autonomous Systems
- **Relevant coursework**: Object Oriented Programming II, AP Computer Science, Calc II

SKILLS

Java/Spring Boot (7 years), **Go (4 years)**, **Dart/Flutter (4 years)**, Python (4 years), Google Cloud Platform (GCP) (3 years), Kotlin (2 years), Javascript (1 year), LaTeX (1 year), VSCode (3 years), IntelliJ (7 years), GitHub (5 years), Xcode (2 years), Swift/SwiftUI (2 years), Google Docs (7 years), Processing(.pde) (5 years), Neural Networks (1 year), Generative AI (Gemini, ChatGPT) (1 year)

- Have GitHub badges (Arctic Code Vault contributor)
- LaTeX example: https://github.com/racecraftr/racecraftr.github.io/blob/main/latex_example/latex_example.pdf

WORK EXPERIENCE

Intern, Smart Beej Robotics (**https://www.smartbeej.com**) **May 2023 - August 2023**

- Created system to automate bootstrapping IOT microcomputers to manage modular indoor farms
- Migrated on-farm software and data to Amazon Web Services using Python
- Calibrated sensors for accurate data measurement, and created algorithms for signal interpretation

- ACSL (American Computer Science League)
  - Finalist for 4 years in a row
  - 2019: Team won first place in New Jersey in the Junior Division, 7th in world competition

- MEGA Hackathon 2022
  - Won best high school project
  - Official website: https://megahack.tech/

RELEVANT EXPERIENCE/PROJECTS

Gradzilla (https://gradzilla.app) **May 2024 - Present**

- Created a web application that used generative AI and real-world college data to aid others in the college selection process.

- Video demo: https://youtu.be/BgpLiC7i-I8
    - More natural search using generative AI (Google Gemini) and Retrieval-Augmented Generation
    - Contains course catalogs
    - Can keep context within a chat session
- **Flutter** frontend, **Spring** and **Flask** backend
- **GCP** for storage (**Datastore**, **Firestore**, **Cloud Storage**), authentication (**Firebase Auth**), Generative AI (**Gemini, Vertex AI**), and Deployment (**Cloud Run**, **Load balancer**)

XINF (https://xinf.dev/) **November 2022 - Present**

- Created a suite of micro utilities that perform common, boilerplate tasks for developers through a simple REST API.
- A REST api to help app writers conveniently get common pieces of information.
- Written in **Go**, deployed on **Cloud run**, using **BigQuery** for analytics.
- Some of these functions are being used by other developers around the world.

Winner, MEGA Hackathon (https://site.megahack.org/) **April 2022**

- Designed and coded a project within the span of 48 hours with teammates
- Project used transcriptions of lectures to generate notes
- Won best high school project

Neural Networks **January 2024**

- https://github.com/racecraftr/neural_net_book: python project based off of the Neural Networks From Scratch book: https://nnfs.io/
- No neural network libraries used (PyTorch, TensorFlow), only NumPy and matplotlib
- Created various LLM models

Teacher, Youth Coding Foundation **May 2022 - June 2023**

- Taught middle schoolers coding.
- Collaborated with other teachers to create a Python programming course. The course contained slides and sample code to teach middle schoolers a 10-day course for Python.
- Link to slides: https://drive.google.com/drive/folders/1pwI8gpP6Cn3MLrQ_ND-bh_e4uEnYPyV0?usp=sharing

Image edge detection

- Wrote a program that detects edges in images using the Processing Language. This was done by applying a basic matrix transformation on the underlying image.
- Link to blog post: https://medium.com/hackerlog/edge-detection-4d42ca234dfb

“Useless” Java (https://github.com/racecraftr/UselessJava) **June 2022 - August 2022**

- Consistently uploaded interesting pieces of code written in Java & Kotlin over the course of the Summer of 2022. Supplemented code with blog posts and Youtube videos explaining and demonstrating the overall structure and functionality of each day.
- Blog series on https://medium.com/@savim2020
- Focused on:

- Messing with Libraries
- String manipulation
- Esoteric Programming Language Program Generation
- Making the code as useless as possible

Untitled App (In progress) **July 2022 - Present**

- Location-based social media app where you can only view messages sent around you
- Backend written in **Spring Boot**, Frontend written in **Flutter/Dart**
- Used **GCP** to authenticate (**Firebase Authentication**), store messages & large objects (**Datastore**, **Cloud Storage**), deploy (**Cloud Run**), and analyze data (**BigQuery**)

Stay Safe (In progress) **August 2023 - Present**

- App that allows administrators of commercial/educational facilities to quickly send alerts to others
  - Alerts can refer to any sort of emergency, such as medical, criminal, etc.
- Backend written in Spring boot
- Frontend written in Flutter/Dart

Interactive Series (https://medium.com/hackerlog)

- Interactive, visual programs
- Exploring use of Computer Science as Art
- Written in the Processing Language

FOR FUN

In general

- Juggling
- Proficiency in written and spoken french
- Learning Japanese and Hindi

High school

- Cross Country running
- Member of school choirs
- Cast member in school-run musicals for three years in a row
- Participant in School Cultural Shows
- Coding in my fun time
- Ran the Chess Club at school

College

- Member of school choirs
- Writer in school's satire newspaper

OTHER INFORMATION

- United states citizen