

AVNEET SINGH

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WORK EXPERIENCE

Amazon

Software Development Engineer | Java, Kotlin, Python

Seattle, WA (October 2024 - Present)

- Currently work on the Display Ads Team, which owns a high-throughput, low-latency **Ads Recommendation System** that powers all display ads on Prime Video and processes millions of requests per second.
- Build backend microservices in **Kotlin** and **Java**, and provision stacks, metrics, dashboards, and alarms with AWS CDK (**Python** & **Typescript**) as infrastructure-as-code.
- Led the design, implementation and successful launch of a Personalized Promotional Banner featured on the Prime Video Home Page in Q1 2025, resulting in a **25 million increase in Annual Revenue**.
- Built a **TPS Load Generator** using live production **S3 data** which currently supports custom request injection to simulate and validate over **200K** transactions weekly through deployment pipelines.
- Helped integrate an **ads ranking system** with Prime Video's user ranking infrastructure to deliver **personalized ad experiences**, improving targeting precision and user engagement for Prime Video.

Deloitte

Software Engineer | Java, C++

Arlington, VA (May 2024 - August 2024)

- Worked on a Government Public Sector (GPS) projects, focusing on **full-stack development**, utilizing **React** for the frontend and **Java** for the backend development.
- Leveraged **C++** to create an internal CLI tool that provided file summaries, which increased the efficiency of consultants by **34%** when sifting through large volumes of client files, improving overall productivity.

Edge Case Research

Software Engineer Intern | Golang, Vue.js

Pittsburgh, PA (April 2023 - September 2023)

- Conducted feature development to a full-stack web app using **Golang** and **Vue.js** to monitor safety metrics in autonomous vehicle systems; developed a **tree-node visualization tool** to display key performance indicators (client claims, evidence and resolutions) to streamline cross-team insights.

PERSONAL PROJECTS AND COMPETITIONS

SIG's Cracking the Code Challenge | 2nd Place

(September 2024)

- Secured **2nd place** in the Susquehanna International Group's Cracking the Code Challenge at Carnegie Mellon University during my senior year of college.

KaizenOS | Voice Assistant iOS App

(January 2024 – May 2024)

- Built an iOS app using Swift that integrates GPT-4o for voice interaction, Apple Calendar and task syncing, and Google Firebase (GCP) for user authentication and data storage; the app attracted **500 users** to its waitlist and reached **30k views** across social media platforms.

Carnegie Mellon University picoCTF Competition

(March 2023)

- Played a pivotal role in the CMU Pico CTF by assuming a leadership position and driving our team to a **top 100 placement** out of 6000 teams, in a competition of international stature; demonstrated problem-solving skills and expertise in the areas of **reverse engineering** and **binary exploitation**.

EDUCATION

University of Pittsburgh

Pittsburgh, PA (August 2020 - May 2024)

- **Degrees:** Honors Bachelors in Computer Science, Minor in Neuroscience
- **Relevant Coursework:** Data Structures and Algorithms, Computer Networks, Object Oriented Design, Probability & Statistics, Linear Algebra, Operating Systems, Computer Architecture, Differential Equations

SKILLS AND INTERESTS

Programming Languages: Python, Java, Kotlin, Typescript, C/C++, SQL

Tools and Infrastructure: AWS, ECS, Docker, Git, Jarvis, iGraph, DV Insights, ECS, S3, Lambda, CloudWatch

Libraries/Frameworks: NumPy, Pandas, React.js, REST API, OpenCV, GraphQL

Interests: Tabla (have performed solos internationally), Ultimate Frisbee (team captain), Running, Chess