

Akilesh Praveen

Email: akilesh.praveen@gmail.com | LinkedIn: <https://www.linkedin.com/in/akipraveen/> | GitHub: <https://github.com/AkiPraveen>

Education

University of Maryland, College Park (College Park, MD) - B.S. Computer Science

Dec 2021

Notable Coursework: Distributed Systems (Graduate level), Parallel Programming, Advanced Data Structures, Algorithms

Experience

Founding Software Engineer @ Stealth Startup

Oct 2022 - Feb 2023

- Learned new stack: **NestJS**, **Prisma**, **PostgreSQL** & **Apollo GraphQL** & shipped multiple robust backend features with third-party integrations that contributed to multiple successful demos and our first signed contract
- Delivered complex frontend features that leveraged **ReactJS**, **Redux** and **MaterialUI**, deployed on a **NextJS** frontend. Wrote first **Cypress** tests at the company to ensure quality of these deliverables
- Projects include a **Twilio**-integrated appointment scheduling workflow, a **Mapbox**-integrated route optimization flow, an invoice reporting dashboard using **Recharts**, and a math-heavy trucking tariff assessment workflow

Fullstack Software Engineer @ Athelas

Aug 2021 - Oct 2022

- Designed, implemented and maintained the Athelas RPM API, an enterprise-scale remote patient monitoring SaaS product that uses **Python**, **Flask**, **PostgreSQL** and **SQLAlchemy** to expose and monetize internal Athelas RPM workflows for third party B2B clients (<https://athelas.readme.io/>)
- Refactored complex package shipping automation flow, increasing daily shipping throughput by 1000%, achieved by optimizing our use of third party REST API calls & **PostgreSQL** database queries / **SQLAlchemy** ORM code
- Worked closely with design and PM to create a bespoke **Typescript** & **Vue** health data visualization suite project focused on meeting customer needs through rapid iteration. (**Vue** and **Typescript** frontend, **Flask**, **Python**, **SQLAlchemy** and **PostgreSQL** backend)
- Created modular REST API and database software infrastructure using **Flask**, **SQLAlchemy** and **PostgreSQL** to expand Athelas's offerings of low-cost RPM sensors for all patients. (Pulse Oximetry, Glucometers, Temperature monitoring)

Software Engineer Intern @ Athelas

Summer 2021

- Designed & implemented asynchronous, cadenced batch shipping of RPM related products for 25,000+ patients using **Python**, **Flask** and **Celery** deployed on **GCP** alongside exhaustive logging & error monitoring
- Worked with engineering counterparts at multiple Chinese hardware firms to architect & implement backend and database changes using **Python**, **Flask** and **PostgreSQL** to support next-generation mass produced Athelas RPM hardware

Software Engineer Intern @ HP Enterprise

Summer 2019 & Summer 2020

- Won **HPE Best in Class Scholarship** & **1st Prize** at **HPE Intern Project Fair**
 - Created tooling to manage orchestrated **Docker** containers that would run different test suites on HPE Storage arrays
 - Resulting suite was **~115% more efficient** in using system resources than existing VM-based test workflows
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Projects

Golang-FUSE Distributed Filesystem

Nov 2021

- Log-structured distributed filesystem written in **Golang**, running at the user level using **Bazil FUSE**
- Uses **Merkle Trees** to efficiently determine inconsistencies between nodes, leverages **gRPC** & **Google Protobufs** to serialize and communicate this metadata in order to maintain consistency
- Implements **Rabin-Karp Fingerprinting** for content-defined chunk boundaries as in [A Low-bandwidth Network File System](#) (Muthitacharoen et. al)

CMSC389E: Digital Logic Design through Minecraft

Jan 2020 - Dec 2021

- Head lecturer for a **digital logic design & theory university course** at the University of Maryland, College Park
- Guided students as they built a 2-bit computer in the hit sandbox game '*Minecraft*' complete with ALU, ROM, and RAM. Designed and built an online textbook using **HTML**, **CSS** and **JavaScript** to demonstrate concepts through online demos (<https://www.cs.umd.edu/class/fall2021/cmsc389E/>)
- Appointed Executive Director of STICS (<https://stics.umd.edu/>), led organization in helping university students to design and teach courses at UMD.