Riyan Charania

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EDUCATION

Princeton University **May, 2026**
Bachelor of Science and Engineering in Computer Science *Princeton, NJ*

- **GPA: 3.8/4.0**
- **Coursework:** Full Stack Development, Algorithms and Data Structures, Probability/Stochastic Systems, Machine Learning, Real Analysis, Linear Algebra, Distributed Systems, Operating Systems, Computer Architecture, Information Security, Data Mining, Computational Biology

WORK EXPERIENCE

Software Engineer **Jan. 2024 – Aug. 2024**
Social Circles (Non-profit) *Princeton, NJ*

- Developed full stack social network web application deployed on **Render** using **React** for the front end, **Flask** and **PostgreSQL** for the back end with functionality for users to sign up for events, join similar groups and customize profiles
- Implemented administrative user **React** components to ban malicious users, send out mass emails with filtration, edit/community event components along with posting site-wide announcements
- Reached out to and partnered with Social Circles non-profit who use the web application to coordinate community events in Princeton, website has **~50+** user network

Data Science/ML Engineer **Summer 2024**
Austin Achieve *Austin, TX*

- Revamped transportation routing system by optimizing routes through machine learning in **Python** via **Scikit-learn**, **NumPy** and **Pandas** integrated with **Excel** for **2000 students** to improve on-time arrivals for school buses by **12%**
- Developed fleet management features implemented in **Excel** and **Python** scripts to manage a 40 bus fleet which resulted in **~10%** more efficient workflows leading to decreased labor costs
- Developed and implemented data managing system leading to **15% time saved** in repetitive tasks, saving **$67,000** yearly in labor costs

Research Assistant **Summer 2023**
Rubenstein Lab *Princeton University*

- Conducted hands-on research on crop productivity of 3 Sisters Farming vs traditional farming methods, including physically planting crops, deploying AgTech technology to monitor growth metrics across multiple plots and using these metrics to analyze crop productivity in **R** assessing impact on yield and growth

PROJECTS

Bitcoin Client **Sept. 2024 - Dec. 2024**

- Developed efficient and simplified Bitcoin client from scratch using **Rust**, leveraging the **cargo** package manager for managing dependencies, building and testing
- Implemented Bitcoin protocol components including constructing Merkle Trees, validating block membership and P2P-networking

Spatial Transcriptomics Analysis Web Application **Jan. 2024 - Present**

- Developed **React** web application that makes **spatial transcriptomics** analysis easier, using a user-friendly interface with **Seurat** running on **AWS** in the backend.
- Set up and deployed the backend on AWS, utilizing **EC2, S3** and **Lambda** for automation, making the system scalable and efficient.

LEADERSHIP

Team Lead - Princeton University Entrepreneurship Club **Jan. 2023 – Present**
President - Princeton South Asian Theatrics **Sept. 2024 - Present**

LANGUAGES, TOOLS & FRAMEWORKS

- **Languages:** Python, Java, Javascript, C++, Golang, Rust, HTML/CSS, Typescript, NodeJS
- **Tools/Frameworks:** NumPy, Pandas, TensorFlow, PyTorch, MongoDB, MySQL, Git, React, Linux, AWS, Docker, RESTful API, Flask, CI/CD, SQL and NoSQL Databases, NPM, Vite, Azure, Terraform, Kubernetes, Angular