# Soham Jain

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## Education

**Carnegie Mellon University** **May 2027**
*B.S. in Computer Science; Minor in Machine Learning* *Pittsburgh, PA*

- **Relevant Courses:** Data Structures and Algorithms, Computer Systems, Functional Programming, Discrete Math, Linear Algebra, Multivariable Calculus, Artificial Intelligence, Machine Learning, Computer Vision, Mobile and Web Application Development

## Technical Skills

**Languages and Operating Systems:** Python, Java, C, C++, JavaScript, HTML/CSS, TypeScript, Rust, SQL, MATLAB, Linux/Unix, macOS
**Developer Tools:** Git, Docker, Vim, Amazon Web Services (AWS) EC2, MongoDB, Google Cloud, Firebase, Android Studio, PostgreSQL
**Libraries & Frameworks:** React, Vite, Express, Node.js, Next.js, Flask, NumPy, Pandas, TensorFlow, PyTorch, Keras, OpenCV

## Experience

**ScottyLabs** **Aug 2025 – Present**
*Software Engineer* *Pittsburgh, PA*

- Utilizing **React, TypeScript**, and **Railway** to integrate live data from CMU Dining Services into an app that streamlines menus and specials for **10,000+ monthly users**.
- Leading the integration of a geospatial routing system with **Rust** and **REST APIs** to sort campus dining locations by walking distance.

**Vytal.AI** **May 2022 – Dec 2024**
*Software Developer and Machine Learning Engineer* *Alexandria, VA*

- Used **Flask, Next.js**, and **MongoDB** to develop a quantitative brain health assessment app via novel eye-tracking software at Venture Capital-backed startup.
- Optimized **Python** biometric pipelines and deployed ML models on **AWS EC2** to scale testing to **300+ clinical beta users**.

**Virginia Polytechnic Institute** **April 2024 – May 2025**
*Computer Science Research Intern* *Blacksburg, VA*

- Designed quantum-classical hybrid algorithms with **Python** and **MATLAB** to address graph coloring and other boolean SAT problems, **reducing computation costs by up to 65%** compared to leading models.

## Projects

**RoutineRemind** **June 2022 – Present**

- Developing a **patent-pending** app with **JavaScript, HTML**, and **Firebase** to create personalized schedules for children with autism.
- Scaling product to **200+ active users** through clinical partnerships and integration in local schools.
- Recognized as **first place in the Congressional App Challenge (top 4%)**; demoed app at Capitol Hill.

**EyeLS** **Aug 2023 – Sep 2025**

- Constructed a gaze-tracking application that maps eye movements to click locations with **92% calibration accuracy**, enabling patients with neurodegenerative disorders like ALS to communicate nonverbally while **saving over $15,000 annually**.
- Granted research stipend and **Technical Excellence Award** from IEEE (top 3 out of 300+ projects).

## Research & Publications

**A Transformer-Based Approach to Diagnose ALS via EEG Analysis** **Feb 2025**
*17th International Conference on Advanced Computer Theory and Engineering*

**LapseNet: A Hybrid CNN-LSTM Approach for Accurate and Efficient Vision-Based Fall Detection** **Nov 2024**
*6th International Conference on Robotics and Computer Vision*

- Recognized with **IEEE Best Presentation Award** (top 1.5% of 500+ participants).

**ConVox: A Deep Learning Approach for Accurate Multilingual Voice Disorder Detection** **Aug 2024**
*5th International Conference on Big Data, Artificial Intelligence and Internet of Things Engineering*

**RexDash: A Technical Dashboard for Analyzing Replica Exchange Molecular Dynamics Simulations** **Oct 2023**
*Journal of Student-Scientists' Research (George Mason University Computer Science Internship)*