

Soham Jain

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Education

Carnegie Mellon University

Bachelor of Science in Computer Science

December 2027

Pittsburgh, Pennsylvania

- **Concentration:** Machine Learning
- **Relevant Courses:** Data Structures and Algorithms, Artificial Intelligence, Applied Machine Learning, Discrete Math, Linear Algebra, Multivariable Calculus, Computer Vision, Mobile & Web Application Development, Research Statistics, Physics, Biology, Psychology

Technical Skills

Languages: Python, Java, C++, C/C0, JavaScript, SQL, HTML/CSS, TypeScript, Q#, LaTeX

Developer Tools: Git, Vim, VS Code, MongoDB, Google Cloud, AWS, Azure, Firebase, Jira, Android Studio, Jupyter Notebook, Figma

Libraries & Frameworks: React, Node.js, Next.js, Flask, PostgreSQL, NumPy, Pandas, TensorFlow, PyTorch, Keras, Scikit-learn, OpenCV

Experience

Vytal.AI

Software and Machine Learning Engineer

May 2022 – Dec 2024

Alexandria, Virginia

- Used OpenCV and React Native to develop a smartphone AI application that quantifies brain health via novel eye-tracking software in **30-second evaluations** at VC-backed startup.
- Optimized Python biometric pipelines and deployed ML models on AWS EC2 to scale testing to **300+ clinical beta users**.
- Created head-gaze detection algorithm with YOLOv8 that achieved **15% higher accuracy** than previous models.

Virginia Tech Department of Computer Science

Computer Science and Quantum Computing Researcher

April 2024 – May 2025

Blacksburg, Virginia

- Spearheaded research with Dr. Atul Mantri on applying Grover's algorithm to solve boolean SAT problems in Qiskit and Q#.
- Used MATLAB and Python to build a quantum-classical hybrid algorithm that addresses the graph coloring problem on a map of the 50 U.S. states, **cutting computational cost by 65%** compared to classical recursive methods.

Projects

RoutineRemind | React, JavaScript, TypeScript, Python, HTML/CSS, Firebase

June 2022 – Present

- Developing **patent-pending** app that uses NLP and audio classification to create personalized schedules for children with autism.
- Scaling product to over **500 active users** through clinical partnerships and integration in local schools.
- Recognized as **first place in the Congressional App Challenge (top 4%)** and demoed project to Representatives at Capitol Hill.

CMUEats | TypeScript, Vite, React, Vanilla CSS, Elysia, Railway

Aug 2025 – Present

- Integrating live API data from CMU Dining Services into website that streamlines menus and specials for **5,000+ students monthly**.

Research & Publications

LapseNet: A Hybrid CNN-LSTM Approach for Accurate and Efficient Vision-Based Fall Detection

6th International Conference on Robotics and Computer Vision (ICRCV)

- Designed a lightweight neural network model to detect indoor falls with **99%+ accuracy** in training and testing
- Earned the **IEEE Best Presentation Award** for exceptional oral and poster presentation (**top 1.5%** of 500+ participants)

A Transformer-Based Approach to Diagnose ALS via EEG Analysis

17th International Conference on Advanced Computer Theory and Engineering (ICACTE)

- First-author on paper introducing a Transformer to diagnose ALS in two minutes

RexDash: A Dashboard for Analyzing the Performance of Replica Exchange Molecular Dynamics Simulations

Journal of Student-Scientists' Research

- First-author publication with Dr. Christopher Lockhart at George Mason University

Leadership

Youth International Digambar Jain Organization

President and Co-Founder

February 2022 - Present

- Teach Jain principles like *ahimsa* (non-violence) and peace through educational programming for **over 150 students**.
- **Raised \$25,000+** to construct a temple for worship and cultural events in Northern Virginia.

Coding with Soham Jain

Educational Content Creator

July 2022 - Present

- Create programming tutorials about web and mobile development on YouTube for an audience of **100,000+ viewers**.