

Shubham Parab

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Education

University of Michigan, Ann Arbor, MI	2027
Bachelor of Science in Computer Science	
Lynbrook High School, San Jose, CA	2024
High School Diploma, Valedictorian, GPA: 4.0/4.0	

Coursework and Technical Skills

Coursework: Object Oriented Programming, Intro to Data Science, Data Structures and Algorithms, Discrete Math
Languages: Python, Java, C++, SQL, Flask, JavaScript, HTML, CSS, TypeScript, Svelte, React, Next, Tailwind, ShadCN
Web & AI Technologies: REST, RAG, Web Graphics, Websockets, Web Effects, Long Polling, APIs, Game Development
Software & Tools: Git, Jupyter, Visual Studio Code, RAGFlow, Postman, Vercel, Render, PNPM, Supabase, Firebase

Experience

Full Stack Developer	Feb 2025 – Present
Tech@NYU Dev Team	

- One of 10 student developers selected to build NYU's upcoming Classroom-LM AI-driven education chat assistant tool.
- Built RAGFlow-based chat assistant functionality and user interface, developed student notes augmentation featureset.

Principal Software Engineer	Sept 2024 – Present
NYU Concrete Canoe	

- Developed ML paddling technique optimizer synthesizing 45+ Apple Watch motion data streams to provide comparison graphs, segmented analysis, and LLM feedback, leading to race speed improvements for 12-time regional champion team.
- Implemented G-Code optimization for steel CNC milling toolpaths, halving milling times and tripling success rate.

Virtual Reality (VR) Interactions Developer	Sept 2024 – Dec 2024
Metaverse for Education	

- Developed Meta Quest Oculus VR headset remote training software for Tormach 770M CNC milling machine.

Teaching Assistant	Aug 2023 – Jun 2024
Lynbrook High School Computer Science Department	

- Built learning tools for 150+ AP Computer Science students, taught and evaluated students on technical concepts.

Publications

Parkinson Disease Recognition using a Gamified Website: ML Development and Usability Study	2023
• Developed a web-based test and Random Forest Model to diagnose Parkinson's disease with accessible and cost-effective approach in collaboration with J. Boster and Dr. P. Washington, University of Hawaii. <i>JMIR Formative, Vol 7</i>	
DL Prediction of Parkinson's Disease using Remotely Collected Structured Mouse Trace Data	2024
• Enhanced data collection platform for preliminary Parkinson's disease detection study to support more diverse data collection, more robust tests, complex deep learning models, and ten times more participants. <i>MedRxiv</i>	
Enhancing Automated and Early Detection of Alzheimer's Disease using Out-Of-Distribution Detection	2023
• Applied out-of-distribution detection to brain MRI-scan-based 2D CNN models and image-segmentation-based Random Forest models, boosting Alzheimer's Disease detection and classification accuracy to 98% and 95%, respectively. <i>ArXiv</i>	

Projects

Data Structure Visualizer <i>HTML, JavaScript, CSS</i>	2024
• Drag-and-drop visualizer for linked lists, stacks, queues, binary search trees, and hashmaps built in collaboration with Prof. Salim Arfaoui of NYU Computer Science, used by several NYU faculty and 400+ NYU students yearly.	
Manhunt Game Manager <i>Next, React, Typescript, SQL, Tailwind</i>	2025
• Realtime web app for playing large-scale Tag/Manhunt, with instant point tracking and synced timers. Features live location updates using Leaflet & OpenStreetMap, and DeepSeek-based challenge generation and point evaluation.	
Pacman <i>HTML Canvas, JavaScript, CSS, Node.js</i>	2022
• Graphics-based retro game featuring HD adaptive graphics, a live leaderboard, replay features, played by 700+.	
Coefficient of Determination (R^2) Visualizer <i>HTML, JavaScript, CSS</i>	2024
• Interactive visualizer and animation two-variable statistics featuring custom data entry and data sharing, built in collaboration with Mr. Kenny Iams, Lynbrook High School AP Statistics teacher, used by 100+ AP students yearly.	
Scholarly Insight <i>Next, React, Typescript, SQL, Tailwind</i>	2025
• Personalized research article search system fetching recent papers from arXiv and Google Scholar. Features individualized recommendations, discussion forums, article bookmarking, author notifications, and Gemini-based article summaries.	
AGP Beats <i>HTML, JavaScript, CSS, Node.js</i>	2023
• Music player website with stream counts, playlists, queues, and synced music streaming, used for 2000+ song streams.	