Neel Bansal

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EDUCATION

Northeastern University, Computer Science   Class of 2029
- **Coursework**: Calculus II, Discrete Structures, Program Design and Implementation, and First-Year Writing
- **Leadership**: President of LANE (LinkedIn At Northeastern); grew network to 1000+ followers reflecting credibility.

American International School of Riyadh, *International Baccalaureate*   Class of 2025
- **STEM IB Scores**: Math AA HL (7), Physics HL (7), Chemistry SL (7)
- **Academic Distinction**: High Honors Student
- **Leadership**: Co-Founder of the UNICEF Club and Chess Club, promoting social impact and strategic thinking on campus. Part-time member of the Robotics Club, Mu Alpha Theta (Math Club), and Chemistry Club. Conducted tutoring for Mathematics and Chemistry.

CERTIFICATIONS

Google Cybersecurity Certification ([View Certificate](#))   January 2025 - July 2025
- **Relevant Courses:** Security Risks, Networks and Security, Linux and SQL, Assets, Threats, and Vulnerabilities, Detection and Response and Automation of Tasks with Python.

Meta Front-End Developer Professional Specialization Certificate ([View Certificate](#))   March 2023 - July 2023
- **Relevant Courses:** Principles of UI/UX Design, Advanced React, Version Control, React, HTML, CSS, and JavaScript.

Stanford Mathematical Thinking ([View Certificate](#))   June 2025 - August 2025

Harvard CS50x Course ([View Certificate](#))   August 2023
- **Relevant Courses:** Scratch, C, Python, SQL, HTML, CSS, JavaScript, and Flask.

Google Tech Support Fundamentals ([View Certificate](#))   July 2021 - August 2021

WORK EXPERIENCE

Stealth Startup, *Web Developer*   July 2025 - Ongoing
- Collaborating with a Fortune 40 Under 40 entrepreneur to launch a high-impact venture while continuously developing new features to enhance user experience.
- Building the front end using Next.js and Tailwind CSS for a performant, responsive UI Integrating Sanity CMS as the content management backend for scalable content delivery
- Implemented regex verification for user data and leveraged localStorage for enhanced functionality to user experience.

Arkaa, *Web Developer*   June 2025 - Ongoing
- Conducted a full website UX/UI audit, identifying 20+ areas for improvement in typography, layout, and navigation
- Redesigned Instagram and CTA sections, improving readability and engagement-projected click-through increase of 15-25%.
- Standardized padding, button sizes, and headers across pages, boosting visual hierarchy and user experience.
- Optimized URLs and SEO elements, including meta tags and page titles, enhancing organic search visibility. Final Google Lighthouse scores are consistently reaching 95+ across all sections.

Seva in Action, *Internship Teacher*   July 2023 - August 2023
- Delivered digital literacy training to 20+ neurodiverse and PWD students, with a focus on accessibility, Excel, and Word, resulting in a 100% course completion rate.
- Mentored 4 students on technical projects. 2 received internships/full-time jobs at Microsoft, and 1 at Wells Fargo.
- Increased classroom computer performance by 30% by removing bloatware and optimizing RAM usage, leading to faster boot times and improved access for all students.

Sunshine Boulevard, *Computer Specialist Intern*   May 2023 - July 2023
- Enhancing performance for a multimillion-rupee e-commerce platform with approximately 10K+ monthly users.
- Improved website performance by 15% through Google Accessibility tools and reducing average page load speed from 3.2s to 1.4s, resulting in better SEO and user retention.
- Enhanced user experience (UX) through data-driven theme adjustments, increasing average session duration by 20% and reducing bounce rate by 15%.
- Captured and edited 500+ product/event photos optimized for web formats, boosting social media engagement by 20% and improving site load times with efficient image formats like .webp.

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PROJECTS

Saudi Stock Digest ([Live Demo](#)) | TypeScript, React, Vercel, Firebase, API, Tailwind CSS   March 2024 - September 2024
- Built a web platform aggregating simplified financial insights from 16 financial consultants, scholars, and market experts to promote youth financial literacy, implementing real-time data updates and secure user authentication
- Reached 10,000+ students across 20+ schools, supported by 8 assignments and a hand-graded final project; 85% of survey respondents reported improved financial awareness
- Featured on Bahrain's largest news station ([SABQ](#)) and 20+ media outlets, generating worldwide attention credibility.
- Partnered with the Saudi Arabian government; and explored collaboration with the Saudi Stock Exchange (Tadawul).

Traffic Collision Avoidance System ([Live Demo](#)) | Typescript, TailwindCSS, React, Three.js   January 2022 - May 2022
- Developed 3D visuals of the Traffic Collision Avoidance System (TCAS) and collaborated with a commercial pilot with 30+ years of experience to ensure aviation accuracy and realism in aircraft motion modeling, zone violations, and conflict resolution logic.
- Showcased CPA (Closest Point of Approach) calculation and protected zone modeling using vector math and spatial analysis with mathematical expressions. These are integrated LaTeX-rendered mathematical derivations for educational clarity.
- Rendered dynamic 3D aircraft motion and collision alerts using Three.js and physics-based modeling.

Pathfinding Visualizer ([Live Demo](#)) | Typescript, Tailwind CSS, React, GitHub Pages, Figma   January 2022 - May 2022
- Created a visual representation of Dijkstra's algorithm, using a car-road example for pathfinding.

ChromaGAN ([Live Demo](#)) | Python, PyTorch, JavaScript, CSS, HTML   May 2021
- Developed a deep convolutional generative adversarial network to generate new abstract art.

Shift-N Blog ([Live Demo](#)) | NextJS, Sanity, CSS, HTML, TypeScript   July 2023
- Launched a tech-blog related to the latest technology updates and reached 3,000+ users worldwide.

AloX Discord Bot | Python, discord.py   July 2023
- Built a bot serving 1,000+ people for server moderation and interactive user games.

MANUSCRIPTS

Optimizing Surface Coverage in Axisymmetric Spray Systems Using 3D Drag-Based Particle Modeling and Eulerian Integration ([Paper Progress](#))   2025 - Ongoing
- Modeled optimal spray angles of a nozzle to maximize 3D surface coverage using drag-based droplet trajectory equations.
- Applied Euler's method and vector decomposition to simulate fluid motion with custom Python code.
- Quantified intersections with a parametric human model to compute total surface area coverage.
- Currently extending the model using Runge-Kutta methods, nondimensional analysis, and alternative nozzle designs for journal submission.

Optimizing Urban Traffic Flow using Computational Geometry   July 2024 - Ongoing
- Utilizes OpenStreetMap (OSM) data and OsMnx for street map analysis.
- Applies Dijkstra's algorithm for pathfinding and integrating Delaunay Triangulation for potential urban traffic optimization.

Python Fundamentals   September 2023 - Ongoing
- Authoring a 200-page book covering the fundamentals of Python and advanced concepts.

SKILLS

Programming Languages: Java (Beginner), Python, C, SQL, HTML, CSS, JavaScript, ReactJS, NextJS, and TypeScript.
Tools: GitHub, Sanity CMS, TensorFlow, Figma, and Firebase.
Additional Experiences: Arduinos, Pair Programming, Peer Review, Basic Spanish, and Conversational Hindi.