

Sumit Kumar

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EDUCATION

Stony Brook University, NY

Anticipated May 2028

Bachelor of Science in Computer Science

GPA: 3.81

- Intended specialization: Data Science and Artificial Intelligence
- Pursuing a double major in Applied Mathematics and Statistics
- **Relevant Coursework:** Object Oriented Programming, Data Structures and Algorithms, Calculus I/ II/ III, Linear Algebra, Discrete Math, Graph Theory, Systems I & II, Probability and Statistics, Data Science, Data Analysis, Artificial Intelligence
- **Honors:** Academic Achievement Award - Two Time Recipient, Dean's list (All semesters), Global Excellence Scholar, Regional Mathematical Olympiad 2023 qualified (Top 40 from North Bihar region)

EXPERIENCE

Lead Tutor for Computer Science & Mathematics

August 2025 – Present

Academic Success and Tutoring Centers & Residential Tutoring Centers

Stony Brook, NY

- Tutor 30+ students across Computer Science and Mathematics, covering object-oriented programming, data structures and algorithms, systems, discrete mathematics, programming languages, calculus, and linear algebra
- Delivered 175+ hours of drop-in tutoring and 50+ hours of 1:1 appointments, debugging code and guiding students through algorithmic problem solving
- Collaborate with the Assistant Coordinator to manage day-to-day tutoring center operations and support students and tutors

Undergraduate Researcher for Algorithms

January 2026 – June 2026

Under Prof. Pramod Ganapathi

Stony Brook, NY

- Conducted focused research on algorithmic problem-solving under the guidance of Prof. Pramod Ganapathi.
- Implemented and analyzed solutions using divide-and-conquer and decrease-and-conquer, evaluating correctness and computational complexity

Co-founder & Treasurer

July 2025 – January 2026

Indian Classical Music Club

Stony Brook, NY

- Co-founded the Indian Classical Music Club at Stony Brook University to promote Indian classical music among students.
- Built and deployed the club website from scratch using HTML, CSS, and JavaScript; managed content and updates

PROJECTS

Manas Care | *NextJS, Supabase, Gemini API, TypeScript, SQL*

- Built a full-stack mental wellness web app rooted in Vedic practices, including Raga Chikitsa, Pranayama, Trataka, and AI-powered Dinacharya scheduling
- Implemented client-side AES-GCM encryption for journaling so user data is unreadable server-side
- Integrated Gemini API for circadian task classification across 6 Vata/Pitta/Kapha time windows

AlgoWorld | *React, Vite*

- Architected a high-performance interactive algorithm visualizer, featuring comprehensive modules covering graph theory, data structures, and probability simulations
- Implemented advanced graph algorithms (Dijkstra's Shortest Path, Kruskal's & Prim's MST, BFS/DFS) leveraging data structures including Min-Heaps and Priority Queues

Notes2TeX | *Python, OpenCV, Gemini API, React, Docker, Typescript, LaTeX, TikZ*

- Built a computer vision pipeline using OpenCV for perspective correction, glare reduction, and layout segmentation of hand-written notes and whiteboard photos
- Integrated multimodal AI to convert handwritten mathematical expressions into LaTeX and generate editable TikZ vector diagrams from sketches

CallBreak Game | *React, JavaScript*

- Built a web implementation of the Callbreak card game with a state machine enforcing trick-taking rules, bidding, trump mechanics, and legal move validation
- Implemented multi-round scoring, turn rotation, and responsive gameplay across desktop and mobile devices
- Designed scalable state management to synchronize hidden and public game state while preventing illegal actions

SKILLS

Languages: Python, Java, C, C#, C++, JavaScript, TypeScript, SQL, OCaml

Computer Science: Data Structures, Algorithms, Object-Oriented Programming, Problem Solving, Database Systems

Frameworks/Tools: React, Next.js, Node.js, Docker, Git, Supabase

APIs/Platforms: REST APIs, Gemini API, Discord API, Web Audio API

Other: Software Development, Software Testing, Technical Mentoring, Team Collaboration, Code Review