

# Mayank Roy

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EDUCATION	<b>University of Pennsylvania</b> , School of Engineering & Applied Science, Philadelphia, PA Master of Computer and Information Science Relevant Coursework: Software Systems, Big Data Analytics, Geospatial Cloud Computing (Spring 2026) <b>Expected May 2027</b>
	<b>SRM Institute of Science and Technology</b> , Chennai, India Bachelor of Computer Science and Engineering, GPA: 3.97/4 Relevant Coursework: Data Structures & Algorithms, Operating Systems <b>May 2025</b>
SKILLS	<b>Programming Languages:</b> Proficient in: Python, Javascript, C++, SQL, HTML5/CSS3; Familiar with: Java, Typescript <b>Frameworks:</b> Next.js, Vue.js, Nuxt.js, React, Flask, Django, Node.js <b>Tools:</b> Git, AWS, Redux, PostgreSQL, Docker, MongoDB, Firebase, Supabase, PostGIS
EXPERIENCE	<b>UNIVERSITY OF PENNSYLVANIA</b> – Philadelphia, USA <i>Graduate Teaching Assistant – Database and Information Systems (CIS 550)</i> <b>September 2024 – Present</b>
	<b>CINKOD DEVELOPER COMMUNITY</b> – Chennai, India <i>Full Stack Developer Intern</i> <b>April 2024 – June 2024</b> <ul style="list-style-type: none"><li>• Architected robust and scalable PostgreSQL backend and RESTful API middleware features pertaining to user authorization and metadata management for an inter-college developer organization across 13+ colleges</li><li>• Engineered intuitive, streamlined role-based console for assigned college administrators to manage events, ticketing, and user registration; Analyzed role-based data obtained to drive up engagement through UX by roughly 5%</li><li>• Contributed to decision making on DB hosting, dramatically reduced monthly infrastructure costs by 35% through thorough analysis of AWS EC2 usage optimization patterns and neglecting use of managed services</li><li>• Shipped assigned features 1 week before deadline by using pre-requisite knowledge effectively; communicated with networks in competitive software startups to learn time and cost efficiency methods</li></ul>
	<b>SECURRA HEALTH</b> – Chennai, India <i>React.js (Frontend Developer) Intern</i> <b>June 2023 – July 2023</b> <ul style="list-style-type: none"><li>• Used React.js framework to develop modern frontend interfaces for the web-app version of an existing mobile application that tracks user health metrics</li><li>• Utilized Azure Devops (specifically azure repos) to collaborate with 2 other interns for creation of a ‘user health dashboard’ displaying critical metrics and medical notifications sourced from REST API calls</li><li>• Collaborated closely and passionately with the lead frontend developer for creating frontend state and context management solutions using redux; brought down instance costs by ~8% upon minimizing calls to the database.</li></ul>
	<b>PROJECTS</b> <b>PennCloud, CIS 5050 – Software Systems / 2025</b> <ul style="list-style-type: none"><li>• Engineered a highly available distributed storage and messaging backend using C++ in a docker environment, implementing a custom Key-Value store to manage file manifest, metadata, emails and more.</li><li>• Architected a highly fault tolerant replication engine based on Paxos Consensus model to ensure strong consistency between server nodes</li><li>• Developed a robust checkpointing and recovery logic to minimize downtime, prevent data loss, network partitions and ensure quickest recovery</li></ul>
	<b>Fleetwise, IIT Mumbai Hackathon / 2023</b> <ul style="list-style-type: none"><li>• Initiated efforts to participate in a national hackathon @ IIT Mumbai; collaborated to build a fleet management site</li><li>• Developed a robust and scalable next.js (/app router) for frontend, PostgreSQL, SQLAlchemy, and FastAPI for the backend; Demonstrated exceptional problem-solving and adaptability by creating text-based navigation using FastAPI, pivoting effectively when we discovered late into the project that interactive map navigation libraries were not supported.</li><li>• Implemented containerization with Docker and hosted image on DockerHub, streamlining CI/CD process, reducing setup time in hosted environments by 20%</li></ul>
ACTIVITIES	<b>Personal Portfolio / 2023</b> <ul style="list-style-type: none"><li>• Coded a portfolio application utilizing svelte-kit for frontend, Go based backend (for some functionalities) and firestore</li></ul>
	<b>Lead Representative - CHIPSET / 2023-2024</b> <ul style="list-style-type: none"><li>• Coordinated two major annual events – ‘Hello Hackers’ and ‘TechXchange’, chaired club recruitments processes and organized 5+ workshops to impart senior year technical knowledge and useful tips to freshman students</li></ul>
	<b>Volunteer at Engin / 2025</b> <ul style="list-style-type: none"><li>• Volunteered to virtually teach English 1-on-1 for 6 months to a Ukrainian refugee committing 2 hours each week.</li></ul>