MEHUL BASU

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EDUCATION

M.S., Computer Science — Expected May 2026

University of Wisconsin-Madison, Madison, WI — **3.92/4.0 GPA**

B.S., Computer Science — Dec 2024

University of Wisconsin-Madison, Madison, WI — **3.84/4.0 GPA**

Relevant coursework: Data Structures & Algorithms, Machine Learning, Database Management, Operating Systems, User Interfaces, Computer Networks, High-Performance Computing, Big Data Systems, Data Engineering

WORK EXPERIENCE

Neubode | Founder — March 2024 – April 2025

- Architectured a scalable, full-stack roommate-matching platform (React, Supabase) with a custom matching engine to calculate real-time compatibility scores, reducing infrastructure costs by 60% through a hybrid NoSQL/SQL design
- Managed a 4-engineer team and product roadmap while leading investor outreach & GTM strategy to validate market fit
- Optimized platform performance via 24-hour client-side caching, route-level code splitting, and browser-side image compression resulting in 68% lower latency and 30% reduction in computational costs for serverless functions

KeeperAI | Software Engineer Intern — May 2024 – Aug 2024

- Reduced production bug backlog by 20% through triage, root-cause analysis, and fixes for the MS Teams app
- Redesigned dashboard and integrated SSO, improving daily active usage and user onboarding by 25%

Siemens Digital Industries Software | Software Engineer Intern — June 2023 – Aug 2023

- Modernized data upload pipeline, simplifying ingestion and enabling near-real-time analysis for large datasets
- Proposed efficient DB algorithms (Python, Pandas, MSSQL) to accelerate query times by 99.5% (30s+ to 0.15s)
- Communicated with the client to align project deliverables, identifying key optimization areas across large CSV files

University of Wisconsin Law School IT Helpdesk | Student Technician — Aug 2022 – Present

- Operated CRM systems to manage service requests from more than 800 faculty and students
- Automated attendance reporting for 100+ classes using Canvas LMS API and Google Apps Script

CLASS PROJECTS

QUIC Traffic Classification | Datacenter Network Systems — Fall 2025

- Developed a Hybrid Convolutional Neural Network (PyTorch) with parallel 1D-CNN and MLP branches to classify encrypted QUIC network traffic packets with 89.5% accuracy, a 26% improvement over Random Forest baselines
- Applied featurization fusing packet-level sequences (inter-arrival times, directions, sizes) with 68 derived statistical features
- Engineered a distributed training pipeline: Distributed Data Parallel (DDP) across 4x GPUs to process 40M+ flow records

Weather Data Platform | Big Data Systems — Fall 2025

- Engineered a weather data platform (gRPC, HDFS, Cassandra) with a scalable data pipeline (Apache Spark)
- Implemented data replication and LRU caching, improving system uptime to 99.9% during simulated node failures

High-Frequency Currency Arbitrage | High-Performance Computing — Spring 2025

- Leveraged OpenMP to parallelize Bellman–Ford negative-cycle detection across 19 currency node pairs
- Achieved 3x speed-up at 4 threads and 3.6x at 8 threads vs. baseline, processing 86,400 snapshots/sec and simulating a theoretical 0.71% daily return on real-world forex data

Letter of Recommendation Management System | Software Engineering — Spring 2025

- Led a 5-person team in Agile Scrum to build a full-stack app (MySQL, React, Express) with GitLab CI/CD pipelines
- Designed ERD, created APIs, and organized role-based views for students and professors to track requests

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, Typescript, C, C++, SQL, HTML/CSS, Bash
Frameworks: React, Node.js, Express.js, OpenMP, CUDA, gRPC, Pandas, PyTorch, PyArrow, Spark, JUnit
Tools & Platforms: Docker, Postgres, MySQL, GCP, Unix, Figma, Postman, Git, HDFS, Cassandra, Tableau