

MITHUN RAMESHKUMAR

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Education

Dartmouth College | Thayer School of Engineering

June 2028

Bachelor of Arts, Computer Science & Engineering Sciences

Hanover, NH

Bachelor of Engineering, Planned Concentration in Artificial Intelligence

GPA: 3.85/4.00 | ACT: 36/36

- **Coursework:** Algorithms & Data Structures, Software Design & Implementation, Deep Learning, Computer Vision
- **Honors:** Top 15% GPA; Citation for Meritorious Performance; Buy the DIPP Stock Pitch (3rd of 250 teams)

AIT-Budapest, Budapest University of Technology and Economics

Fall 2026

Computer Science Study Abroad Program

Budapest, Hungary

Technical Skills

Languages: Python, C/C++, TypeScript, JavaScript, Java, Swift, SQL, Kotlin, MATLAB, Apex

Frameworks: Next.js, React, React Native, Capacitor, Playwright, Prisma, PyTorch, LangChain, Unsloth, pandas

Tools: Git, Docker, PostgreSQL, pgvector, Redis, Bun, Vercel, Sentry, MCP, Salesforce, ESP32, SolidWorks, SAP2000

Relevant Experience

Vector Solutions Group LLC

Jul. 2026 – Present

Software Engineer

Remote

- Built an automated distressed-property sourcing pipeline across 24 markets: web scraping with MFA relay, a 12-factor weighted distress model with Gemini photo review, and Gmail broker outreach
- Architected an MCP server that ingests Google Drive into a tenant knowledge base any LLM can query via SQL and Voyage semantic search, with atomic validated writes, self-hosted Google OAuth, and Dockerized CI/CD

New Capital Partners

Jun. – Aug. 2025

Software and Automation Intern

Birmingham, AL

- Eliminated 80,000 CRM sync errors and duplicates with Apex validation, supporting 20% MoM revenue growth
- Cut call wait times by 40% with new call routing; automated daily call metrics with Python and the 3CX API
- Automated Salesforce call logging via custom 3CX XML templates and email sync, eliminating manual data
- Oversaw \$1M+ in outbound shipments as Interim Operations Manager for FireRock Building Materials

Jacobson Laboratory, Geisel School of Medicine

Jan. – Jul. 2025

Machine Learning Researcher

Hanover, NH

- Fine-tuned 8B-parameter LLMs with Unsloth, reducing perplexity by 35%; cut GPU memory 60% via QLoRA
- Built a RAG pipeline in LangChain that retrieves patient history to keep multi-turn therapy dialogues coherent

Projects

SafeSpread

Jun. – Sep. 2026

- Designed and built an anti-icing rover with custom salt-brine delivery and ESP32 electronics, implementing C++ coverage planning and PI speed control to autonomously treat 480 sq ft in 6 min 17 sec
- Built a React Native app with a native Swift module for ARKit visual-inertial odometry, streaming position and heading over Bluetooth for GPS-free navigation with calibrated steering and fault-triggered stops

The Daily Graphs | thedailygraphs.com

Jan. – Jun. 2026

- Solo-built and shipped a social graphing app on the web and iOS TestFlight, with over 50 daily active users
- Prevented double-counted placements and votes with atomic Redis writes (HSETNX/HSET); kept a 3-second live board consistent by discarding stale polls during optimistic updates
- Built stateless JWT auth with session revocation and OTP; shipped iOS via Capacitor with APNs on Vercel Cron

Faster R-CNN Object Detector

Mar. – Jun. 2026

- Implemented Faster R-CNN in PyTorch on a VGG16 backbone: anchor generation, the RPN, and the RoI head
- Reached 60.9% mAP on Pascal VOC 2007 test; ran an ablation showing a 100-epoch run overfit to 56.9%

Nuggets

Mar. – Jun. 2025

- Built an authoritative game server in C, syncing state over UDP for 26 players and a live spectator
- Implemented per-player fog-of-war with line-of-sight visibility, remembered terrain, and gold hidden out of view

Interests & Activities

Interests: Black Mirror, Spikeball, The Fray, Waffle House, Calisthenics, Dystopian Novels, Cooking, Tennis, Kayaking

Activities: Palamedes Partners, Chi Gamma Epsilon (Kappa Sig) Executive, Raaz Dance Group (Summer Director)