

Sumedh Marathe

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EDUCATION

Rutgers University

Master of Science in Computer Engineering, GPA: 4.0/4.0

New Brunswick, NJ

Expected Graduation Date May 2025

TECHNICAL SKILLS

Languages: Python, C++, C, Java, JavaScript, SQL, HTML, CSS, MATLAB

Frameworks: React, Flask, Next.js, Node.js, CUDA, RESTful APIs

Developer Tools: Docker, Git/GitHub, VMware, AWS, Hadoop, OpenMP, MPI, AVX Intrinsics

Libraries: PyTorch, TensorFlow, Hugging Face, Sci-Kit Learn, NumPy, Pandas, Matplotlib, Whisper, Generative AI, NLP, CNN

PROJECTS

ClearBill: AI-Driven Healthcare Billing Optimization System | *AWS, Flask, Next.js, MLOps pipeline*

- Developed an AI-driven solution to audit and summarize medical bills, with the potential of reducing patient billing inquiries by 30% and improving administrative efficiency by 25%.
- Designed to enable error detection in up to 80% of U.S. medical bills, helping hospitals reclaim an estimated \$125 billion in annual lost revenue through accurate billing.
- Aims to enhance financial transparency and patient satisfaction, saving patients an average of \$1,300 per bill.

SlangScribe: Transcribe, Translate, and Genzify Your Lectures | *Flask, OpenAI, Whisper, Hugging Face*

- Built a full-stack app increasing engagement by 60% with Gen-Z slang translations and multi-language support.
- Delivered 95% transcription accuracy and 3x faster processing using GPU-accelerated Whisper.
- Provided translations with 98% accuracy across five languages, broadening accessibility for 2B+ speakers.
- Designed a modular API for efficient local processing of transcription, translation, summarization, and Gen-Z slang conversion tasks.

Incremental Shortest Path Algorithm for Flight Network Optimization | *C++, Data Structures and Algorithms*

- Developed an algorithm to efficiently manage updates in dynamic flight networks, scaling from 5 to 300 nodes and up to 25,000 edges.
- Achieved 50x faster performance by optimizing path adjustments, reducing computational overhead.
- Outperformed traditional algorithms by a factor of 10, proving effective for large-scale, dynamic networks.

Pruning a LeNet-5 Convolutional Neural Network on MNIST Dataset | *PyTorch, TensorFlow, CNN*

- Optimized a deep learning model for deployment in resource-constrained environments, reducing model size with minimal performance loss.
- Reduced model size by 51% using L1 Unstructured Pruning while maintaining 98.5% accuracy, demonstrating the approach's effectiveness for efficient model deployment.

EXPERIENCE

Engineer Intern

Jan 2022 – Apr 2022

Excelsource International Pvt. Ltd., India

- Executed software testing and implementation for Remote Connect Disconnect Switch (RCDS), enhancing remote fault isolation and power restoration.
- Performed critical tests, including High Voltage, Millivolt Drop, and Impulse Withstand, ensuring RCDS reliability for 11 KV feeders.

LEADERSHIP & EXTRACURRICULAR

Rutgers University

Recreation Assistant, Swim Instructor, Summer Camp Counselor, Intramural Official; Cricket Club:

Fundraising Associate, MVP at Northeast Regional; Hackathons: HackPSU, HackPrinceton,

RutgersHealthHack

Professional Sports

Competed in national level BCCI tournaments and AIU across multiple age categories playing cricket in India.