

Uditanshu Tomar

Boulder, Colorado | udto3255@colorado.edu | +1 7203239817 | linkedin.com/in/uditanshutomar
github.com/uditanshutomar

Education

University of Colorado Boulder, MS in Computer Science. 2024 - 2026

- **Coursework:** Datacenter Scale Computing, GenAI powered Software Engineering, Neural Network and Deep Learning, Database Management Systems, Computer Vision

SRM Institute of Science and Technology, B Tech in Computer Science. 2018 - 2022

- **Coursework:** Data Structures and Algorithms, Operating Systems, Computer Networks, Software Engineering and Project Management

Experience

Software Engineering Intern, Signadot (Y Combinator, 2020), USA. 2025

- Collaborated on improving **Kubernetes** native infrastructure for local testing using Signadot sandboxing.
- Identified friction in **CLI**, **Helm**, and Quickstart installation flow and contributed documentation improvements to accelerate onboarding.
- Contributed to sandbox environment improvements and strengthened understanding of microservices and Kubernetes deployment patterns.

Software Developer Engineer - 1, BharatPe (Financial Technology Unicorn), India. 2023

- Developed loan limit decision logic using credit history, existing loans and geographic factors, contributing to a **15% reduction** in Non Performing Assets through improved risk assessment.
- Integrated Synapsys workflow software into decision logic so product teams could modify metrics without developer intervention, reducing implementation time by **20%**.

Software Engineering Analyst, Ford Smart Mobility (Global Tech Center), India. 2022

- Enhanced **Spring Boot** back end services for path estimation and data collection in a corporate ride hailing app, improving API response time by **43%** and increasing route accuracy and reliability.
- Collaborated with two cross functional teams to improve scalability, enhancing system performance by **8%**.

Skills / Technologies

Languages: Java, Python, SQL, JavaScript, C, TypeScript

Backend & Frameworks: Spring Boot, Node.JS, Microservices Architecture, RESTful API, JUnit Testing

AI / ML: Neural Networks, Deep Learning, Computer Vision, LangChain, LLM, PyTorch, Natural Language Processing, RAG

Databases & Infrastructure: Neo4j, Redis, Snowflake, Linux, MySQL, MongoDB, Docker

DevOps & Tools: Git, Docker, AWS, Google Cloud, CI/CD (GitHub Actions/Jenkins)

Projects

GENEC, Hypergraph Guided Extract Class Refactoring (Research, CU Boulder)

- Built an end to end pipeline combining static dependency analysis with evolutionary coupling from Git history to construct a hypergraph and detect cohesive clusters for Extract Class refactorings.
- Implemented metric driven ranking using LCOM5, TCC and CBO and generated human readable refactoring plans as a CLI tool.
- Validated on open source systems and added optional LLM based validation and naming for safer recommendations.

Ansh.ai, Real Time Voice Based Agentic AI with RAG and Avatar

- Built a real time conversational journaling app using Flask and React with speech to text, memory retrieval, and context aware responses.
- Implemented retrieval augmented generation using a vector database to fetch memory aware answers across sessions.
- Integrated an avatar interface for demos and showcased full stack AI engineering from audio streaming to inference.

LLM Powered Tutoring Platform with Knowledge Graph and RAG

- Developed an SAT tutoring app with knowledge graph construction and GraphRAG style querying using Neo4j and sentence transformers.
- Enabled model modularity and GPU acceleration with configuration toggles for personalized question answering.

Publications

Comparing SVM and Neural Networks performance in Face Detection

Shivam Bhatia, *Uditanshu Tomar*, Aryan Vikas Jain

10.1109/CONIT51480.2021.9498383

Accomplishments

- Winner, American Express CodeStreet 20 Hackathon Built Knab App, a customer return behavior scoring tool, selected among **6000 plus** teams.
- Runner Up, HackCU 11 (AMD AI PC Track) Built Ansh.ai, a real time agentic journaling AI using speech to text, memory retrieval, and avatar APIs.
- Judge, MHacks 2025 and CalHacks 2025 Evaluated projects for technical design, scalability, and AI automation workflows while mentoring teams on engineering execution.