

Ronit Virwani

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science

Master of Science in Computer Science

Expected May 2026

Relevant Coursework: Advanced Data Structures and Algorithms, Systems Programming, Distributed Systems, Advanced Machine Learning Algorithms, Secure Software Development, Artificial Intelligence Applications

MIT ADT University, Pune, India

Bachelor of Technology in Information Technology

May 2024

Relevant Coursework: Design and Analysis of Algorithms, Machine Learning, Deep Learning, Information Security, Database Management Systems, Operating Systems, Computer Networks, Software Engineering & Project Management

TECHNICAL SKILLS

Languages : Java, Python, C++, Javascript, Rust

Web Development : React Js, Next Js, Svelte, Langchain, FastAPI

Libraries and Frameworks : Pytest, React, NodeJS, ExpressJS, Nginx, Apache httpd, Pandas

Databases : MySQL, MongoDB, ChromaDB, MilvusDB, Hadoop

CI/CD Automation : Jenkins, Git, Github Workflows, AgroCD, Helm, Ansible, IAC Terraform

PROFESSIONAL EXPERIENCE

Techpeek Magnus Solutions Pvt. Ltd., *AI Engineer* | Bengaluru, India

February 2024 – July 2024

- Executed the creation and launch of the [Legal AI platform](#), significantly enhancing legal services.
- Implemented retrieval-augmented generation using Langchain and integrated open-source Large Language Models
- Designed a customizable search service using Natural Language Processing, enhancing precision through advanced retrieval
- Managed and optimized databases (MilvusDB, ChromaDB) for over 100k documents, reducing latency.
- Integrated an ML model for legal case predictions with LLM reasoning, increasing accuracy to 85%.
- Created Docker configurations and optimized Nginx settings, achieving 99.9% system uptime.
- Devised backend security with FastAPI, cutting the unauthorized access.

Japan Third Party (JTP) Co. Ltd., *Virtual Graduate Trainee* | Pune, India

February 2024 – March 2024

- Developed and implemented AI-driven solutions to address real-world business challenges, enhancing operational efficiency through the integration of IoT and Robotic Process Automation (RPA).
- Enhanced advanced presentation and interpersonal communication skills tailored to the unique professional norms of the Japanese corporate environment, boosting cross-cultural collaborations

RESEARCH EXPERIENCE

SUNY Binghamton University, *Graduate Research Assistant* | Binghamton, NY

September 2024 - Present

- Developed optimized Transformer and BiLSTM models under the supervision of [Prof. Sujoy Sikdar](#) to address the Tip-of-the-Tongue phenomenon, utilizing TensorFlow and PyTorch to achieve improvement in word retrieval accuracy.
- Utilizing advanced NLP and deep learning techniques, including contextual embeddings and memory-augmented neural networks to enhance information retrieval through the integration of transformer architectures and rigorous cross-validation

MIT ADT University, *Research Assistant* | Pune, India

May 2023 - June 2024

- Conducted research under the guidance of [Dr. Shraddha Phansalkar](#) on enhancing an Intrusion Detection System (IDS) by integrating Federated Learning and Blockchain technologies, achieving a 99.17% accuracy in detecting anomalies, with improved data privacy and security using decentralized model updates.
- Presented the [research paper](#) at the annual IEEE conference (ICBDS 2024) in Pune, India, and earned subsequent publication in the journal IEEE Xplore.

PROJECT EXPERIENCE

EduScript - New Programming Language

December 2023

- Developed a domain-specific language and custom interpreter with a real-time simulator featuring advanced obstacle detection and multi-object handling, showcasing unique language design and intelligent automation capabilities

Dynamic out-of-order instruction Pipeline Simulator

August 2024

- Designed an out-of-order instruction pipeline simulator with support for result forwarding, instruction reordering
- Simulator used a rename table, issue queue, branch queue, branch prediction, checkpointing and parallel memory access.

ACHIEVEMENTS AND AWARDS

- [Led Google Developers Club at MIT ADT University](#), selected among top 300 students in India.
- Won special recognition award at the [Smart Pune Health Hackathon](#) and advanced to finals in 5 national hackathons in India.