

Rishav Roy

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EDUCATION

New York University, Courant Institute of Mathematical Sciences – New York, NY Sept 2023 - Present
Master of Science, Computer Science
Coursework: Algorithms, OS, Big Data, ML, Computer Vision, Distributed Database Systems GPA 3.89/4.0

National Institute of Technology, Trichy – Tiruchirappalli, India July 2016 - June 2020
B. Tech in Computer Science and Engineering | Minor in Management Studies
Coursework: Data Structures, Algorithms, ML, NLP, Database systems, Operating systems GPA 8.44/10.0

TECHNICAL SKILLS

Coding Languages: C++, CSS, HTML, Java, JavaScript, Python, Scala, SQL, Typescript, XML
Frameworks/Tools: Angular, Apache Hadoop, Apache Spark, Extract Transform Load (ETL), Docker, Flask, Git, GraphQL, HuggingFace, LangChain, MongoDB, MySQL, NextJS, NodeJs, NumPy, PostgreSQL, PyTorch, React, Scikit-learn, Spring Boot, TailwindCSS

WORK EXPERIENCE

Technology Manager: Morgan Stanley – Bengaluru, India Jan 2023 – Aug 2023

- Overhauled and deployed a cloud-ready micro-service-oriented **real-time trading system** to replace the traditional monolith-styled trading system – *Java, Spring Boot, Typescript, Angular, AngularJS, Rxjs*
- Collaborated with intern to develop an **ML-assisted data parser** to parse emails and messages to automate line-item creation on the trading system – *ElasticSearch, Python, NumPy*

Senior | Technology Associate: Morgan Stanley – Bengaluru, India Jan 2021 – Dec 2022

- Spearheaded the development of **Azure-cloud-hosted trade-bidding API** service for external clients resulting in a 200% increase in quarterly trading activities – *Spring Boot, Spring Cloud Gateway, Swagger OpenAPI*
- Managed a team of 4 TAP trainees to build a **log tracking and alerting system** which improved outage resolution speeds and helped in bottleneck identification – *Splunk, Spring Boot, Angular*

PROJECTS AND RESEARCH

Image-Finder (React.Js, Next.Js, Java, Spring Boot, PostgreSQL, GraphQL, Docker) May 2024 – June 2024

- Conceptualized a **multi-threaded web crawler** that extracts all the images from a given website.
- Leveraged the **BFS technique** and robots.txt for a fair and responsible extraction strategy
- Developed a Full-stack web application with caching facility reducing the average extraction time to 500 ms - <https://github.com/rishavroy97/imagefinder>

LENR.ai (Python, Llama2, MistralAI, HuggingFace, ChromaDB, Flask, Angular) Sept 2023 – Nov 2023

- Investigated the effectiveness of **Recommendation Systems** built on top of **Large Language Models**
- Utilized the **RAG architecture** using similarity searches on vector databases and prompt engineering on LLMs
- Developed a **Full-stack web app** PoC for the LENR scientific research domain for the Predictive Analytics course at NYU - <https://github.com/rishavroy97/LENR.ai>

Curiosity RL (Python, Tensorflow, OpenAI Gym) Jan 2020 – April 2020

- Compared the effects of **Curiosity-driven algorithms** against traditional Reinforcement Learning algorithms.
- Encouraged bots to explore more in **video game simulations** where rewards are sparse.
- Presented to the CS Department at NIT-Trichy as part of my capstone project.

Clinical Depression Detection (Tensorflow, Django, Bootstrap UI) Jan 2019 – Mar 2019

- Ideated a proof of concept to **diagnose clinical depression** using audio signal processing and CNN models.
- Published the findings at the 2019 ICAC3: <https://ieeexplore.ieee.org/document/9036838>

Sportsfete App (NodeJs, Express.Js, Google Firebase) Jan 2018 – Feb 2018

- Implemented the Sportsfete portal for handling NIT - Trichy's annual sporting event.
- Added features to support **live score updates** and **real-time commentary**.
- 1000+ downloads on the Google Playstore to track the plethora of sporting events happening simultaneously.

POSITIONS OF RESPONSIBILITY

Head(Web-dev): Spider R&D Club June 2019 – May 2020

- Corresponded with the university administration via emails and phone calls for sustainable task delegations
- Developed multiple projects for the student body and the university