

RUSHIKESH DESAI

Data Structure | Deep Learning | AI/ML

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EDUCATION

M. S., Computer Science, *New Jersey Institute of Technology, Newark, NJ*

Sept 2023– May 2025

Coursework: Cognitive computing, Data-Driven Financial Modeling, Machine learning, Advanced Database System Design, Operating Systems, Applied statistics.

Bachelor of Technology, Computer Engineering, *D.K.T.E Engineering Institute, India*

Aug 2016 – July 2020

Coursework: Data Structures and Algorithms, Database Management Systems, Automata Theory, System Programming, Machine Learning, Database Systems, Cloud Computing.

SKILLS SUMMARY

Programming Languages: Python, C++, Java

Databases: SQL, MongoDB, Neo4j

Data Science: Scikit-learn, NLTK, BERT, Pandas, TensorFlow, Pytorch, CNN, GNN, Transformers, LLMs, RAG

Tools & Frameworks: AWS, Kubernetes, Docker, Elasticsearch, Tableau, Spark, Hadoop, Kafka, Flink

Finance: Portfolio Analysis, Financial Modeling, Statistics, Bloomberg certification (BMC)

EXPERIENCE

Research Assistant, *Martin Tuchman School of Management, NJIT, New Jersey*

Sept 2024 – current

- Exploring reinforcement learning for dynamic asset allocation and attention-based models for optimal portfolio management.

Data Analyst, (Admission office), *NJIT, New Jersey*

May 2024 – current

- Analyzed application data, developed predictive models for volume, yield, and demographics, and provided insights to optimize admissions, recruitment, and financial aid strategies.
- Built data pipelines to streamline analysis and deliver insights to directors, for strategic decision-making (ETL, data modeling).

Data Scientist, *Flairminds Software, India*

Oct 2022 – June 2023

- Developed and deployed an NLP-based product-matching system for e-commerce, utilizing BERT (word2vec, spaCy) for text processing and analysis, improving product categorization and search relevance.
- Implemented advanced computer vision models (VGG, Inception, ResNet, YOLO-NAS) for image comparison, improving product search accuracy by 30% and reducing search time by 25%.
- Developed ML-driven document parsing system to extract, store, and retrieve data in Elasticsearch, delivering query-based results to improve search efficiency, and deployed it on AWS with React web app interface. (Feature Engineering)

Full-stack developer, *E-venu Computers, India*

Sept 2021 – Aug 2022

- Spearheaded development of Product supply chain system, like integrating recommendation algorithms for target customer segments, predict sales across regions, and enhance inventory management efficiency.
- Implemented Optimizing techniques such as web speed optimization, compression using GZIP, caching along with MongoDB database optimization by data modeling & sizing memory (program optimization).

Software Developer, *Rheal Software, India*

Nov 2020 – July 2021

- Developed Judicial web Systems for U.S. Judiciary counties, enabling case document submissions, reviews, notarization, judge decisions, and warrant generation, requests and approvals, including video call integration for judges and police officers.
- Designed and implemented Healthcare Management System for insurance processing, alongside client-specific, upgrade customizations for full-stack web applications

PROJECTS

- Time Series Price Prediction and Feature Engineering with PySpark:
- Reinforcement Learning for Derivatives Pricing and Hedging:
- Built Generative AI model from scratch to convert text into music, producing around 50 unique music tracks using GANs:
- Developed deep CNN model for text-to-image generation, got 30% boost in image realism:
- Portfolio Optimization using Bloomberg real-time Data with Deep Learning using WCA (Wavelet coherence analysis):
- Developed and deployed Online Toll Collection using Image processing, and Traffic Prediction using Graph Neural Network reducing labor intervention by 76%.
- Completed Ant-Bot project (IIT Bombay E-Yantra Challenge), automating Ant-Bot navigation for real-time map:
- Developed AI powered gameplay with reinforcement learning. Tuned hyperparameter to optimal scale:
Demo: [youtube.com/channel/UCJdWYLtrw7R20EbQ_Wts1A](https://www.youtube.com/channel/UCJdWYLtrw7R20EbQ_Wts1A)
- Built end to end full-stack Banking Website with real-time processing and handling 500+ transactions/second:

EXTRA-CURRICULUMS

- Hackathons Winner:** National Hackathon (Nov 2017), And **MLH HackNJIT 2023** (devpost.com/rrd7)
- Equity Analyst** at NJIT Investment club (currently managing \$75K fund).
- Leading the **Bloomberg Trading Challenge 2024 team** (virtual \$1M portfolio) generating 14% ROI in 6 weeks.
- Internship** (Developer) COEP: Developed news classification model with regression, TF-IDF, TextRank, and OCR. May-July 2018