Manikantan Srinivasan

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EDUCATION

Northeastern University, Boston, MA — 09/2023 – Present
Khoury College of Computer Sciences — Expected Graduation: 2025
Candidate for a Master of Science in Artificial Intelligence
Related courses: Foundations of AI, Algorithms, Machine Learning, Unsupervised Data Mining — GPA: 3.4

UPES, Dehradun, India
Bachelor of Technology in Computer Science and Engineering (Spz. Artificial Intelligence and Machine Learning) — 08/2019 – 05/2023
Related courses: Machine Learning, Neural Networks, OOP, Generative AI — GPA: 8.3

TECHNICAL SKILLS

Languages:	Python, C++, C, Java, Flutter, Cypher
Databases:	MySQL, Neo4j, NoSQL, ArangoDB
Skills:	ML, Generative AI, RL, Unsupervised ML, LLMs, RAG
Libraries:	Pandas, PyTorch, TF, Django, Flask, Langchain-Framework.

WORK EXPERIENCE

Distributed Computing R&D Intern — 10/2022 – 05/2023
BELLE2, KEK, Ibaraki, Japan (remote)

- Built software tools for BELLE2 particle accelerator experiment at KEK, managing 50 times more data than the predecessor BELLE.
- Resolved over 20 major bugs and issues in the distributed grid system supporting over 10 petabytes of data.
- Debugged over 500,000 lines of code, gaining an in-depth understanding of a vast codebase.
- Leveraged JIRA, Gitlab, and containerization. Participated in high-level R&D meetings weekly, collaborating withcomputer scientists and physicists.

Software Engineering Intern (Knowledge Graphs & ML) — 06/2022 – 08/2022
Jio Platforms Limited, Mumbai, India

- Developed APIs using gRPC, Python, and ArangoDB to integrate data from 7+ verticals of the company.
- Applied machine learning techniques to derive insights from over 5 petabytes of data.
- Created over 40 API CRUD functions to enhance data management and integration processes.
- Presented 5+ research ideas on findings and methodologies and easier knowledge graph access.

PROJECTS

SYNTHETIC VISION: DCGAN vs VAE ON CIFAR-10 — 03/2024 – 04/2024

- Gen AI Project - comparative study of DCGAN vs VAE for novel image generation using 60,000 CIFAR images.
- Evaluated models based on metrics like IS and FID; tuned DCGAN to work on 28x28 low-resolution images.
- Generated images of objects belonging to 10 different classes using different latent space dimensions.

ANAKIN BREAKING BAD — 11/ 2023 – 12/2023

- Developed an interactive game based on Star Wars using RL and NLP.
- Implemented A*, BFS, Value Iteration, Sentiment analysis and text similarity metrics to add complexity.
- Designed the game agent to take actions based on negative (-1) or positive (+1) statements using language modelling.
- Collaborated with a team of 4, leading and guiding the group to achieve project goals.

SURFACE CRACK DETECTION — 01/2023 – 05/2023

- Engineered a custom model using TensorFlow and Python to detect surface cracks in buildings affected by earthquakes in the Middle East in February 2023.
- Achieved model performance surpassing many state-of-the-art models like VGG, with over 98% accuracy.

VOLUNTEERING & ACHIEVEMENTS

- Conducted edge case testing on barcode reading tools to assist farmers and veterinary doctors in monitoring sick cattle. The project was presented to state government officials of Uttarakhand, India.
- Researched at the BELLE2 experiment, which includes 100+ institutions across 27 countries and attended important meetings.
- Authored Gen AI and related articles on medium: https://medium.com/@manikantan.srinivasan2001