ADITYA YOGESH NAIR

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EXPERIENCE

Research Trainee March 2024 - August 2024
Amadeus IT Group *Bel Air, Villeneuve-Loubet, France*

- Developed a lightweight prompt compression framework for Large Language Models using attention mechanisms and Random Forest classification
- Achieved 5x lower latency and 70% reduced CPU processing time vs. state-of-the-art methods while maintaining comparable performance metrics

Research Intern July 2023 - Sept 2023
Laboratoire I3S, Center National De La Recherche Scientifique *Sophia Antipolis, France*

- Implemented L1∞ projection algorithms for Convolutional Variational Autoencoders, achieving 80% network sparsity while maintaining image compression quality
- Engineered quaternary DNA sequence encoding with Shannon-Fano coding, reducing transmitted payload by 50% through MDC optimization

Data Science Intern Nov 2021 - Jun 2022
3Analytics *USA (Remote)*

- Automated Naranjo and WHO drug reaction algorithms using Natural Language Processing (Spacy and BioBERT)
- Build COVID-19 Diagnostic Kit for production, with 92% accuracy

PROJECTS

Devanagiri-DDPM
Implemented DDPM using a 10M parameter U-Net architecture in pure PyTorch to generate 32x32 handwritten Devanagari script

Large Language Models (LLMs) for Socratic Method
Prototyped AI tutoring system using RLHF/DPO for Socratic dialogue-based learning

Querying LLMs using SQL
Developed Galois, a prototype system combining database architecture with novel LLM operators to extract diverse model knowledge

EDUCATION

Master of Computer Science (Data Science), EURECOM, Sophia Antipolis 2022 - 2024
Relevant Coursework: Advanced Statistical Inference, Deep Learning,
Distributed Systems and Cloud Computing

Bachelor of Technology (Electronics and Communication), Amrita University 2018 - 2022
GPA: 8.26/10

TECHNICAL SKILLS

- **Languages & Frameworks:** Python, PyTorch, SQL, Spacy, BioBERT, Microsoft Azure, Git
- **Machine Learning:** Large Language Models (LLMs), Transformers, Variational Autoencoders (VAEs), Natural Language Processing, Computer Vision, Diffusion Models

LANGUAGES

- English (IELTS 8.0/9.0), French (A2)