DARSHIT AMIT PANDYA

Machine Learning Engineer

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EDUCATION

Master of Science in Computer Science, **Northwestern University**   GPA: 4.0 / 4.0   Sep 2023 - Dec 2024
- Coursework: Machine Learning, Deep Learning, AI, Generative Methods, NLP, Data Visualization

Bachelor of Technology in Computer Engineering, **Indus University**   GPA: 4.0 / 4.0   Aug 2016 - Jul 2020
- Coursework: Programming (Python, C, C++, Java), Soft Computing (Artificial Neural Networks), DSA
- Achievements: Rank - 4, Received 50% Tuition Scholarship, Won Code-Decode Triathlon (350 students)

SKILLS

Programming: Python, C, C++, JAVA, C#, .NET, JavaScript, SQL, CLI (Unix/Linux/MacOS, Windows)

Frameworks: PyTorch, Tensorflow, Keras, SkLearn (SciKit-Learn), NumPy, Apache Spark, CUDA, D3.js

Architectures: CNN, RNN, LSTM, Transformers (GPTs), Autoencoders, GAN, FFNN, Mixture of Experts (MoE), YOLO

Tools: Colab, Github, Tableau, Amazon Web Services (AWS), Matlab, Visual Studio, Microsoft Office

EXPERIENCE

Engineer, **SMG InfoSolutions Pvt. Ltd.** (India)   Mar 2021 - Jun 2023
- Led a team of two in spearheading the refinement of the flagship product, AXIS Gatepass Visitor Management System
- Leveraged machine learning to optimize backend SQL databases, achieving a 40% reduction in query response time through techniques like query plan prediction and automatic indexing
- Revamped Facial Recognition by fusing ensemble learning over CNN models, translating to 2x faster visitor check-in times

Assistant System Engineer Trainee, **Tata Consultancy Services Ltd.** (India)   Jan 2021 - Mar 2021
- Collaborated closely with cross-functional teams and clients to analyze and evaluate requirements, per AGILE practices
- Engaged in backend development for web applications using Python and SQL, ensuring optimal performance
- Secured a 10% improvement in resolution rates for backend client requests within stipulated deadlines, nurturing client trust

Independent Research Project, **Self-Study**   Aug 2020 - Dec 2020
- Engineered a supervised learning (SVM) based collision-avoidance system using predictive data sharing via IVC
- Attained a prevention accuracy of 97%, and published the results in Springer CCIS

Project Trainee, **Indian Space Research Organization** (India)   Jan 2020 - May 2020
- Orchestrated the E2E development & deployment of machine learning models (SVM & Regression) for an autonomous rover
- Attained 99.78%, 98.69% and 99.72% accuracy for obstacle detection, diversion decision & optimal path selection
- Pioneered two novel methods for Path Planning, outperforming SOTAs by a margin of 3% for diversion decision accuracy

Intern, **ipLockchain** (India)   Jul 2018 - Nov 2018
- Engineered a CNN-based text extraction tool (web app) for processing official credentials, with an F1-score of 0.95

PROJECTS

CombiMoji   (Autoencoders)   (Individual)   Mar 2024
- Trained an Autoencoder with PyTorch on the Emoji dataset, generating high-quality latents with a reconstruction loss of 0.05
- Merged latent representations to create a high-quality mixture of Emojis using vector arithmetic

WikiLang   (RNN, LSTM)   (Individual)   Feb 2024
- Formulated an LSTM model on the WikiText-2 dataset, procuring a 22% improvement over the baseline RNN perplexity
- Implemented dropout regularization and teacher forcing, reducing training time by 25% compared to baseline LSTM

AutoCap   (CNN, LSTM)   (Individual)   Jan 2024
- Implemented a CNN-LSTM model with an attention mechanism to generate captions for images in COCO dataset
- Achieved a BLEU score of 0.58, indicating the quality of generated captions compared to human-generated captions
- Achieved an inference time of less than 3 seconds per image on average, allowing for real-time captioning of images

PUBLICATIONS   Citations: 11 | i10-index: 1

1. **Spam Detection using Clustering-Based SVM:** www.doi.org/10.1145/3366750.3366754
2. **NavIC-based Obstacle Avoidance & Path Planning using Machine Learning:** www.doi.org/10.13140/RG.2.2.28264.08961/1
3. **IVC for Intelligent Collision Avoidance Using Machine Learning:** www.doi.org/10.1007/978-981-16-3653-0_12