ARYAN PATEL

Boston, MA | (+1) 857 424 4388 | patelaryana@northeastern.edu| linkedin.com/in/aryan-patel2107

EDUCATION

Masters of Science in Artificial Intelligence | **Northeastern University** — Boston, MA
Concentration: Machine Learning — **(Present)**

Bachelor of Technology in Computer Science & Engineering | **Quantum University** — Dehradun
Specialization in Artificial Intelligence and Machine Learning — **Aug. 2021 - Jun. 2025**

TECHNICAL SKILLS

Programming & Tools:	Python, Git, Power BI, MS Office
Frameworks & Libraries:	TensorFlow, PyTorch, Scikit-learn, Keras, XGBoost, Pandas, NumPy, Matplotlib, Plotly, MLflow, Seaborn, TensorBoard, Flask / FastAPI
Machine Learning Techniques:	Regression Analysis, Predictive Modeling, Classification (Binary, Multiclass), Feature Engineering, Clustering (K-Means, DBSCAN, Hierarchical), Model Evaluation
Advanced AI Methods:	Deep Learning, Neural Networks, Unsupervised Learning, Reinforcement Learning, Computer Vision, Natural Language Processing
Statistics & Data Science:	Probability Theory, Hypothesis Testing, Statistical Inference, Descriptive & Inferential Statistics, Time Series Analysis
Data Handling:	Data Preprocessing, Data Visualization, Data Structures, Algorithms
Certifications:	Google Cloud Career Launchpad Data Analyst, Neural Networks and Deep Learning, Machine Learning with Python (Udemy), Deep Learning with TensorFlow

PROFESSIONAL EXPERIENCE

AI and Machine Learning Intern | YBI FOUNDATION — **Nov. 2023 - Oct. 2024**

- Developed and deployed a Naive Bayes classifier to categorize **10,000+** customer feedback samples, extracting
- actionable insights from unstructured data.
- Enhanced accuracy by **18%** through systematic preprocessing (tokenization, stopword removal, vectorization), advanced feature engineering, and iterative hyperparameter tuning.
- Conducted a thorough evaluation using metrics such as **accuracy (91%), precision (89%), recall (87%), and F1-score (88%)**, along with confusion matrix analysis to identify specific areas for performance enhancement.
- Documented the methodology, experimental design, and results in a structured report, enabling seamless knowledge transfer and serving as a blueprint for future machine learning projects within the organization.

Machine Learning Intern | PRODIGY INFOTECH — **Jul. 2023 - Aug. 2023**

- Built and validated a **regression model** to predict California housing prices with strong predictive accuracy.
- Conducted in-depth **exploratory data analysis (EDA)**, uncovering correlations between housing prices and **10+ demographic and economic indicators**, including income levels, population density, and proximity to the ocean.
- Streamlined the preprocessing pipeline by implementing procedures for missing value imputation, categorical variable encoding, and feature scaling, which reduced preparation time by **25%** while improving data quality.
- Collaborated with a 3-member intern team to compare regression approaches (linear, ridge, lasso), selecting the best-performing model for deployment.

ACADEMIC PROJECTS

Lung Damage Detection (TensorFlow, TensorFlow Extended (TFX), Seaborn)

- Designed and trained a **CNN** for multi-class classification of lung diseases, including pneumonia, and lung cancer.
- Integrated the model with a **real-time ML pipeline** using TensorFlow Extended (TFX), ensuring smooth data ingestion, automated preprocessing, scalable training, and deployment capabilities in production-like environments.
- Designed the system to serve as a **diagnostic support tool**, potentially reducing manual diagnosis time by **30%** and improving early detection accuracy in clinical use cases.

Multiclass Classification Using Neural Networks (Google Colab, TensorFlow, Scikit-learn, Matplotlib)

- Developed and optimized a neural network on **50,000+ multi-class images**, achieving **92% test accuracy** through extensive hyperparameter tuning and architecture experimentation.
- Validated performance with confusion matrices and learning curves, demonstrating a **15% improvement over baseline models** while ensuring robustness and interpretability.
- Compiled results into a comprehensive report, including visualizations, error analyses, and comparisons against alternative approaches, establishing benchmarks for future research and scalable extensions of the project.