# **Khalid Mehtab Khan**

# Al Engineer | NLP Researcher

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### **EDUCATION**

Master of Science, Data Science & Artificial Intelligence | GPA: 4.0,

Aug 2023 – present | San Francisco

San Francisco State University

• Coursework: Statistical Modeling, Data Mining, Deep Learning, Data Visualization, Algorithm Analysis

# **SKILLS**

Programming & Development: Python, C++, PostgreSQL, JavaScript, React, Next.js, Git

Data Engineering & Cloud Technologies: AWS, Flask, MongoDB, REST APIs

Al & Machine Learning: PyTorch, Hugging Face, Generative Al, Transformer Models, Al Agents, RAG

NLP Expertise: LLM Fine-Tuning, Prompt Engineering, Word Embeddings, ML Pipelines, Model Evaluation

Data Science: Statistical Modeling, Feature Engineering, Clustering, Decision Trees, Data Visualization

# PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Al & ML Research, SFSU

Aug 2024 - present | San Francisco

- Fine-tuned DeBERTa and T5 models using prompt engineering and hyperparameter optimization, improving theme identification accuracy to 91% and reducing manual annotation time by 50%.
- Integrated Masked Language Modeling (MLM) and hybrid transformer architectures, achieving a 15% improvement in model generalization across diverse datasets.
- Evaluated data augmentation techniques (SMOTE) for structured data, improving data pipeline efficiency.

#### Healthcare Data Analyst, Innovaccer

Jan 2021 - Sep 2022 | Noida, India

- Automated data pipelines using Python and SQL, increasing lead generation efficiency by 20%.
- Designed interactive dashboards and visual analytics, enabling real-time performance tracking and datadriven decision-making for healthcare networks.
- Led a cross-functional team of 3 to gather requirements and deliver customized data solutions, improving operational efficiency and reducing the lead generation time by 15%.

#### **PROJECTS**

# **Context-Aware Data Augmentation for Low-Data Scenarios**

Aug 2024 - Dec 2024

- Led a team of frontend, backend, and ML design leads to develop a context-aware data augmentation system that solved low-data training challenges.
- Built a generative Al-powered pipeline using structured perturbations aligned with dataset schemas, enhancing model training accuracy by 3–5%.
- Improved model decision reliability by 15% through implementation of local feature importance analysis.

# Chain of Thoughts Analysis for Multi-Class Image Classification

Jan 2024 - May 2024

- Implemented a framework to analyze decision-making processes and enhance classifier performance.
- Applied chain-of-thought analysis to identify and address misclassification patterns in multi-class classifiers.
- Leveraged visual analytics to interpret model behaviors and implement targeted accuracy improvements.

#### POSITION OF RESPONSIBILITY

**Teaching Assistant – NLP, San Francisco State University** 

Aug 2024 - present

- Conducted two classes for CSC 820 on logistic regression and fine-tuning LLMs using Hugging Face.
- Mentored peers in data science concepts via the Al Stars initiative and workshops on Al innovation.

Resident Assistant, ResLife, San Francisco State University

Aug 2024 – present

- Fostered a supportive environment for 48+ residents through active programming and engagement initiatives.
- Curated and facilitated community events focused on Justice, Equity, Diversity, and Inclusion (JEDI) themes.