MOHAMMAD HEYDARI

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OBJECTIVE

Python Developer with expertise in **data engineering** and **ETL processes**. Strong background in **Python development** using **pandas** and **NumPy** for data transformation. Experienced in **API development** with **FastAPI** and **database management** with **SQL/NoSQL**. Proven track record of successfully **migrating legacy systems** to efficient Python-based implementations with improved performance.

EXPERIENCE

Analytics Engineer *February 2025 - Present*
Revolution Data Platforms *Ottawa, Canada*

- Developed a real-time customer service call management system using **Python**, **FastAPI**, and **WebSockets**, building end-to-end data processing pipelines for voice communication.
- Implemented a prototype application for voice memo transcription with **structured data extraction** and automated task management based on content severity.
- Optimized multi-class text classification through **prompt engineering** and **k-fold validation**, significantly improving model performance.
- Enhanced data quality through efficient **web scraping**, **data transformation**, and **preprocessing techniques** in Python.

Software Engineer *January 2023 - August 2024*
Paphus Solutions *Ottawa, Canada*

- Successfully migrated a Unity-based Android application to WebGL, implementing asynchronous connection management and data handling, demonstrating strong system migration capabilities.
- Integrated Python-based analytics pipelines with cloud services, enhancing real-time data processing through optimized ETL workflows.
- Developed chatbot APIs across multiple platforms using Python and RESTful services, improving user engagement through data-driven insights.
- Optimized deep learning models for custom question-answering, focusing on efficient data processing and query handling.

Course Instructor *September 2022 - December 2022*
Carleton University *Ottawa, Canada*

- Delivered comprehensive Python programming workshops focusing on data manipulation, pandas, and ETL concepts for real-world applications.
- Guided students in implementing ER diagrams and SQL for practical database solutions, emphasizing data integrity and efficient query optimization.

Graduate Research Assistant *January 2021 - November 2022*
Carleton University *Ottawa, Canada*

- Developed a Python-based data generation and transformation pipeline, optimizing ETL processes for deep learning models in research applications.
- Designed custom data preprocessing workflows and performance metrics for efficient data analysis and model evaluation.

Undergraduate Research Assistant *February 2018 - December 2020*
Amirkabir University *Tehran, Iran*

- Developed a Python-based anomaly detection system for time-series data processing, implementing efficient data transformation and feature extraction techniques.
- Created simulation frameworks for generating and validating synthetic data, enhancing model training and evaluation methodologies.

EDUCATION

M.Sc. in Computer Science (Specialization in Data Science) *January 2021 - November 2022*
Carleton University *Ottawa, Canada*

B.Sc. in Computer Engineering *September 2015 - December 2020*
Amirkabir University *Tehran, Iran*

PROJECTS

- **Fine-Tuning and Local RAG for LLMs**
  Developed a lightweight data processing pipeline for Retrieval-Augmented Generation (RAG) using **Python**, enhancing information retrieval from domain-specific datasets. Implemented efficient data extraction and transformation techniques to optimize contextual search, demonstrating expertise in ETL processes for NLP applications.

- **Custom Information Retrieval System**
  Built a search engine from scratch in **Python**, implementing data extraction, cleaning, and transformation pipelines for efficient text processing. Utilized **pandas** for data manipulation and designed an indexing system to improve search accuracy for large document collections.

- **NLP-Driven Sentiment Analysis**
  Developed a Python-based ETL pipeline for processing textual data using **pandas** and **NumPy**. Created vectorized operations for efficient text feature extraction, achieving 93.61% accuracy in sentiment classification through optimized data transformation.

SKILLS

- Strong proficiency in **Python** development with expertise in **pandas**, **NumPy**, and **scikit-learn** for implementing efficient ETL pipelines and data transformation workflows.
- Extensive experience in **data engineering** and **database management** with both SQL (PostgreSQL, MySQL) and NoSQL solutions for optimized data storage and retrieval.
- Demonstrated ability in **API development** using **FastAPI**, **Flask**, and **Django** for robust back-end systems that handle complex data processing.
- Proven track record in **system migration** projects, successfully transitioning legacy codebases to modern Python implementations with improved performance.
- Proficient in **cloud-based data solutions** on AWS and Azure, with experience optimizing data processing pipelines in distributed environments.

LANGUAGES & CERTIFICATIONS

Programming: Python, SQL, Java, C#   **Languages:** English (Fluent), French (Intermediate), Persian (Native)
Certifications: DataCamp Data Scientist with Python, Coursera GANs Specialization