Himalaya Sharma

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EDUCATION

- **University of Waterloo** — Waterloo, Canada
  Master of Engineering - Electrical & Computer (Major: AI & ML); **Grade: 88%** — *Jan, 2022 - Apr, 2023*

- **Birla Institute of Technology & Science** — Goa, India
  Bachelor of Engineering - Electronics & Communication; **CGPA: 8.30** — *Aug, 2016 - May, 2021*
  Master of Science - Biological Sciences

EXPERIENCE

- **Ubiquitous Health Technology Lab - University of Waterloo**
  Data Scientist | Advisor - Prof. Plinio Morita — *Sep, 2022 - Present*
  - Performed Human Activity Recognition (HAR) for 20+ scenarios, achieving a mean F1 score of 0.81, by utilizing classical and ensemble machine learning classification models.
  - Automated data loading and annotation for 40+ participants, obtaining a 70% time reduction, by leveraging Python scripts to extract sensor data from Web APIs, JSON & Excel files and SQL dumps.
  - Constructed a scikit-learn data pipeline to facilitate sequential loading, wrangling, feature engineering, and modeling, resulting in a 2x faster experiment iteration, followed by deployment on Azure DS Virtual Machine.

- **Image & Vision Computing Lab - University of Waterloo**
  Graduate Research Assistant | Advisor - Prof. Zhou Wang — *Sep, 2022 - Dec, 2022*
  - Identified 3+ deep learning models for performance evaluation, by conducting a literature survey of state-of-the-art Image Quality Assessment (IQA) algorithms.
  - Wrote bash scripts to benchmark PyTorch & TensorFlow models on 5+ authentic & synthetic distortion image databases.
  - Deployed batch jobs on multi-GPU compute nodes on High Performance Computing (HPC) clusters, resulting in a 50% reduction in overall training and evaluation time.
  - Evaluated 40+ metrics for incorporation in a submission to **IEEE Transactions on Image Processing**.

- **Vienna University of Technology & New York University, Abu Dhabi**
  Machine Learning Researcher | Advisor - Prof. Dr.-Ing Muhammad Shafique — *May, 2020 - May, 2021*
  - Experimented with TensorFlow sequential models to forecast arrhythmic electrocardiogram data, achieving a mean absolute percentage error of 2.80%.
  - Built a data formatter to filter, preprocess, and transform data, resulting in a 30% increase in productivity by utilizing object-oriented programming principles.
  - Implemented data generators to facilitate real-time data feeding to models, resulting in a 80% reduction in memory consumption.
  - Leveraged Google's attention-based Temporal Fusion Transformer (TFT) to improve forecasting performance by 37%, compared to established baselines using classical methods from Python's Statsmodels.

PROJECTS

- **Netflix Data Analysis** [🖸 GitHub]
  Conducted Python data cleaning and Tableau visualization on Netflix content dataset, revealing insights on movie dominance, genre distribution, and the impact of COVID-19 on content additions.

- **Customer Churn Analysis** [🖸 GitHub]
  Utilized Python and Tableau to analyze customer data, identify churn reasons, and propose strategies for a telecom company, including targeted outreach, alternative data plans, competitor benchmarking, and payment platform enhancements.

- **Adidas US Sales BI Dashboard** [🖸 GitHub]
  Designed a BI dashboard using AWS QuickSight by leveraging Adidas's US sales data consolidated in an AWS RDS PostgreSQL database.

- **Elementary Blockchain** [🔗 App] [🖸 GitHub]
  Implemented a Python blockchain model using OOP, and developed a web app with HTML & CSS front-end and Flask back-end. App features functionalities to view chain, mine blocks, evaluate validity, and trace any illegal modifications.

- **Google's Reverse Image Search Engine Clone** [🖸 GitHub]
  Utilized pre-trained TensorFlow VGG-16 network front-end for feature extraction and generated 60k image encodings to compute similarity scores against query image for obtaining top 5 matches.

CERTIFICATIONS

- **Certified TensorFlow Developer**, by **TensorFlow** | Issued: **Aug, 2022**
- **Certified Cloud Practitioner**, by **Amazon Web Services (AWS)** | Issued: **Aug, 2022**
- **Building Transformer-based Natural Language Processing Apps**, by **NVIDIA** | Issued: **Jul, 2021**

SKILLS SUMMARY

- **Tools**: Tableau, Python (Sklearn, TensorFlow, PyTorch, NumPy, Scipy, Pandas, Matplotlib), R, SQL, Spark, Git
- **Cloud**: AWS (EC2, S3, RDS, QuickSight), Azure (Data Science VM, Databricks)
- **Data Analysis**: EDA, Data Profiling, Regression Analysis, A/B Testing, Data Mining, Dashboard Creation, KPI Tracking