Jibran Bohra

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Experience

Data Engineer

Zoomprop — Mar. 2024 – *Present*

- Developed high-performance RESTful APIs using `FastAPI` for property search and analytics. Integrated OpenAI's `GPT-4o` and `LangChain` into the backend to enhance UI functionality. Collaborated in a DevOps environment using `Docker`, `GitHub Actions`, and the `AWS` suite for CI/CD workflows. Developed ETL processes using `Dagster` to automate updates and standardizations across multiple `PostgreSQL` databases.

Education

Master of Science [MSc] — *University of Cape Town*

Theoretical Physics — Graduation: Dec. 2023

- *The Jet/CGC Correspondence: A Conformal Perspective*
  - Formalized mathematical correspondences between distinct particle physics frameworks by employing advanced symbolic computation techniques. Utilized `Mathematica` for the visualization of conformal transformations in Minkowski spacetime. Synthesized intricate areas of Quantum Field Theory, Lie Theory, and Conformal Geometry to inform research.
- Showcased dissertation research at the eQCD 2022 International Conference.

Projects

Predicting Protein Structure using CNN and LSTM — *See repository here.*

Machine Learning, Convolutional Neural Networks.

- Engineered a machine learning model to predict protein classification. Utilized convolutional neural networks (CNN) to inform structure data and Long Short-Term Memory (LSTM) models to inform sequence data. Overall model approached 93% accuracy in classification.

Geolocating Images with Search Engine — *See repository here.*

Open Source Intelligence (OSINT), Data Scraping, API Requesting.

- Developed a script leveraging the Bing reverse search feature to collect GPS data for specified images. Implemented an asynchronous approach (akin to multithreading) for faster computation using the `asyncio` library.

Publications

[1] J. A. Bohra and Prof. Heribert Weigert, "The Jet/CGC Correspondence: A Conformal Perspective." Presented at Excited QCD 2022. Preview of proceedings available here

Presentations

The Jet/CGC Correspondence: A Perspective through Conformal Transformations — *Giardini Naxos, Sicily*

Excited Quantum Chromodynamics (eQCD) 2022 Conference. — Oct. 2022

- Delivered a concise, twenty-minute presentation to an international audience of physics academics.

Technical Skills

Programming Languages	Python, SQL, Mathematica, LaTeX
Frameworks & Libraries	FastAPI, Pydantic, Dagster, Databricks, Pandas, Tensorflow, Selenium, asyncio
Cloud Services	AWS: App Runner, ECS, EC2, RDS, S3, Lambda, Amplify
Versioning & CI/CD	Git, GitHub Actions, Docker, fly.io, App Runner, Cloudformation
Operating Systems	Unix, Linux