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SHAYAN IRANIPOUR
Curriculum Vitae

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Education

University of Cambridge

- PhD - Department of Applied Mathematics and Theoretical Physics — 2018-2022
  Deep learning for particle physics. Smith-Knight & Rayleigh-Knight prize.
- MMath, Mathematics - Distinction — 2017-2018
  Part III of Mathematics Tripos. Specialised in theoretical physics.
- BA, Natural Sciences - Double 1st — 2014-2017
  Specialised in physics and mathematics. Sidney Sussex academic scholar.

Experience

Xantium Group - Quantitative Researcher — 2022-present

- Building machine learnings models for trading strategies in the financial markets.
- Highly skilled in `Python`: building robust, reliable, and performant production code throughout the mission critical code path handling trading volumes in excess of $1B.
- Well versed in data science pipelines working with large, noisy datasets to research, develop, deploy, and maintain statistical and ML models as trading signals.
- Developed ML research pipelines to facilitate rapid prototyping and ease deployment of production grade models.

Neural Network Parton Distribution Functions — 2018-2022

- Applying deep learning approaches for high precision determinations of proton structure.
- Core `Python` developer and researcher with heavy focus on `Python` implementations of neural network techniques for high energy physics.
- Published research on novel architectures to search for new physics signals.
- Modernized the code base from legacy `C++` implementations to make use of `TensorFlow` and `Keras` frameworks in order to open source the project.
- Presented at numerous international conferences and authored several papers to communicate research.

Additional Skills

Technologies: Highly experienced with `Python` and scientific computing libraries. Good understanding of `SQL`, `Redis`, `YAML`, `Slurm`, `Git/GitHub`, CI/CD, Linux, and `bash`. Familiar with C/C++, build systems, `Rust`, `Docker`, and cloud services. Extensively used LaTeX for document production.

Libraries: Strong experience in `PyTorch`, `TensorFlow`, `Keras`, `NumPy`, `Pandas`, `scikit-learn`, `XGBoost`, `Numba`, `matplotlib`, `seaborn`, `plotly`, `xarray`, `dask`, `SciPy`, `NetworkX`, and `SymPy`.

Professional: Experience presenting and communicating research having attended numerous presentations at international academic conferences and internal presentations. Reading, implementing, and publishing research work in academic journals and internal reports. Working with large code bases across various teams and different timezones. Part of the hiring pipeline for developers and researchers.

Languages: Fluent in Farsi (Persian) and English (native speaker for both).