STEPHEN RO, Ph.D.

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Summary

Researcher and instructor pivoting into data science leveraging 12 years of expertise in data analysis, predictive modeling, and compassionate mentorship. Extensive storytelling experience and marketing technical concepts to non-technical stakeholders.

Experience

Course Manager and Academic Administrator   04/2022 - 04/2023

University of Toronto, Department of Astronomy & Astrophysics   *Toronto, Canada*

- Hosted 300 student meetings leading to discovery of multimillion dollar university-cheating scam.
- Managed 34+ teaching assistants, scheduling duties, resolving disputes, and mentoring teachers.

Postdoctoral Research Fellow   09/2017 - 08/2020

UC Berkeley, Theoretical Astrophysics Center   *Berkeley, CA*

- Constructed nonlinear predictive time-series models, reducing historic errors by 50x and computer resources by 10,000x leading to 5 co-authored publications.
- Simulated and managed 1 TB of multidimensional time-series data with a 100-core cluster to resolve a 50-year physics problem.
- Designed and instructed a python course on data-driven astrophysics using real and large astronomy data, time-series modeling, image analysis, and N-body simulations for 50 students.

Doctoral Candidate   09/2011 - 08/2017

University of Toronto, Department of Astronomy & Astrophysics   *Toronto, Canada*

- Designed and wrote a telescope spectral image simulator using real-world instrument statistics. Collaborated with 4 doctoral candidates to write multi-million dollar grant proposals.
- Wrote a relaxation solver of partial differential equations. Modeled thousands of high-dimensional data sets, presented compelling counterarguments at technical conferences.

Projects

- Created a wine app, [OVINO](#), end-to-end for wine novices. Deployed using [high performing](#) XGBoost price-sentiment classifier, sentence transformers (BERT), and NLP.
- Selected as highest quality data science projects amongst two cohorts at The Data Incubator.
- Built 3 web scraper bots to acquire live inventories of 13.6k products across 800 stores, and 31 million wine reviews. Automated preprocessing, SQL data storage, and recommender updates.

Education

Data Scientist Certification | The Data Incubator Fellowship Program | Sept 2022 - March 2023

PhD in Astrophysics focus on Computational Fluid Dynamics | University of Toronto | November 2017

BScH in Mathematical Physics | Queen's University | May 2011

Technical Skills

Programming: Python | SQL | Bash | REST APIs | YAML | C++ | FORTRAN | HTML
Machine learning libraries: Scikit-Learn | PySpark | Keras | XGBoost | LightGBM
Data Analysis and Visualization: NumPy | SciPy | matplotlib | Pandas | Flask | SpaCy | Tableau
Industry Knowledge: Supervised and unsupervised machine learning | Predictive modeling | Decision-making | Algorithms | Statistics | Feature engineering | Dynamical systems | Teaching