

STEPHEN RO, Ph.D.

stephensro@gmail.com | (+1)510-890-7227 | [GitHub](#) | [Website](#) | [LinkedIn](#)

Summary

Certified data scientist leveraging 12 years of research experience in data analysis, predictive modeling, and simulation. An expert data communicator in research, public speaking, and teaching.

Projects

- Constructed a winning data science project, [OVINO](#). Deployed end-to-end with SBERT, XGBoost ([results](#)), and price-sentiment analysis on 55k user reviews imbalanced with 3-labels.
- Built 4 web scraper bots to acquire 31 million user reviews, live inventories and prices of 13.6k products across 800 stores with automated updates to SQL database.
- Identified veteran users from Stack Exchange Data Dump (82 GB) with Spark, Spark ML and SQL.

Work Experience

Academic Administrator

04/2022 - 04/2023

University of Toronto, Department of Astronomy & Astrophysics

Toronto, Canada

- Led 300 academic investigations, discovered evidence of multimillion dollar plagiarism scam.

Postdoctoral Research Fellow

09/2017 - 08/2020

UC Berkeley, Theoretical Astrophysics Center

Berkeley, CA

- Created robust time-series models reducing prediction errors by 50-fold and computer resources by 10,000-fold, leading to 5 publications and greatly accelerated research with my collaboration.
- Generated 1+ TB high-dimensional fluids simulation and derived deeply interpretable analytics, providing innovative research directions for my collaboration beyond astrophysics.
- Designed and instructed a 6-week python course on data-driven astrophysics with raw complex data, time-series modeling and simulation, statistical methods, and satellite imagery analytics.

Doctoral Candidate

09/2011 - 08/2017

University of Toronto, Department of Astronomy & Astrophysics

Toronto, Canada

- Built a 3D spectral image simulator used by 4 doctoral candidates to write award-winning grant proposals.
- Wrote a moving-mesh PDEs solver to model thousands of high-dimensional data sets, leading to paradigm shift in stellar atmospheric modeling.

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 | C++ | FORTRAN

Machine learning libraries: Scikit-Learn | PySpark | Keras | XGBoost | LightGBM

Data Analysis and Visualization: NumPy | SciPy | Pandas | matplotlib | Flask | Tableau

Industry Knowledge: Supervised and unsupervised machine learning | Predictive modeling | Data modeling | Decision-making | Algorithms | Statistics | Mathematics | Exploratory Data Analysis | Feature engineering | Dynamical systems | Public speaking | Teaching and mentorship