Sofia Pasquini

spasquin@uwo.ca ❖ (647) 970-8541 ❖ London, Ontario, Canada
LinkedIn: https://www.linkedin.com/in/sofia-pasquini/ ❖ GitHub: https://github.com/sofiapasquini
Personal Website: https://sofiapasquini.github.io

SKILLS & COMPETENCIES

Languages: Python (Pandas, NumPy, Astropy, SciPy, Scikit-learn, Matplotlib, TensorFlow, Keras, PyTorch, Sherpa, Seaborn etc.), MATLAB, R, and SQL (MySQL, PostgreSQL); comfortable working with the git framework.
Azure Cloud: AZ-900 (Azure), DP-900 (Data), and DP-203 (Data Engineering) Certifications.
Other Tech: GitHub, Databricks, MS Excel, Linux.

PROFESSIONAL EXPERIENCE

Scotiabank *Toronto, Remote*
Data Scientist, Intern **Sept 2022 - Apr 2023**

- Leverage distributed computing tools for analysis and modeling on the international banking ML/AI pricing team.
- Hyperparameter tuning, machine learning model development, and exploratory analysis on international banking data.

Kroll *Toronto, Remote*
Intern for the Data Enterprise Team **Jan 2022 - Aug 2022**

- **Data Engineer:** Development of enterprise-grade cloud-based ETL pipeline for client data; worked in data warehousing to design the schema using ER diagrams for cross-unit databases on enterprise-wide data cataloging effort.
- **Data Scientist, Analyst:** Development of fintech solution leveraging machine learning techniques to gauge market insights; coordinated search for API resources for this tool as well as communication with third-party vendors.

Western University *London, Ontario, Canada*
Astrophysics Research Fellow **2021 - Present**

- Experimenting with the combination of unsupervised learning (hierarchical and agglomerative clustering, Random Forests) to characterize variability in large carbonaceous grains in space. My use of data from James Webb Space Telescope will mark this a revolutionary study in the field at the intersection of data science and astrophysics (Project repository).

Teaching Assistant **2021 - Present**

- Taught data analysis in MATLAB and Excel, as well as physics concepts, to first year students in lab settings.

Astrophysics Research Assistant
2019 – 2021

- Developed an SQL workflow to ETL large astrophysical datasets from online databases.
- Conducted numerical simulations to constrain the origins of asteroids, comets, and other interstellar objects.
- Developed an ETL pipeline for the collection and use of energy distribution data for a nearby active galactic nucleus.
- Used Markov-Chain Monte Carlo simulations to constrain a numerical model for conditions near supermassive black holes.

EDUCATION

Western University **2021 – 2023**
Master of Science, Astronomy, Cumulative GPA: 4.0. *London, Ontario, Canada*
Awards: Western Graduate Research Scholarship (WGRS), 2021-2023.

Western University **2017 – 2021**
Bachelor of Science, Honors Specialization in Astrophysics, Minor in Advanced Physics, Cumulative GPA: 3.7. *London, Ontario, Canada*
Awards: Maude Holt Kingston Gold Medal for Astronomy, 2021; Dr. Gérard Hébert Scholarship in Physics, 2020; Dean's Honor list, 2018-2021; Western Scholarship of Distinction, 2017.
Courses and Projects: Advanced Machine Learning (Decision Tree Regression), Data Science and Machine Learning (PCA and Clustering, Sentiment Analysis, Multimodal CNN, Random Forest Extrapolation, Feature Selection, Cross-Validation, Logistic and Linear Regression); Computer Science Fundamentals; Statistics; Computational Simulations; Advanced Calculus and Linear Algebra; Ordinary and Partial Differential Equations.

California Institute of Technology **2021**
Code/Astro Workshop in Software Engineering for Astronomers.

- Software engineering skills and best-practices for open-source development.
- Developed my own Python package which simplifies data collection & analysis for common astronomical data types.

SHARCNET Training **2021**
Advanced Research Computing Course

- Machine learning frameworks (PyTorch, TensorFlow, and Scikit-Learn) implemented on Compute Canada's HPC clusters.