Jessica Campbell

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Data Analyst

A highly curious data analyst professionally trained as a data-driven astronomer from the University of Toronto looking to leverage my quantitative BSc and PhD to solve real world problems. Expertise in data cleaning and transforming, statistical analysis, regression analysis, storytelling, and data visualization using SQL and Python.

PROJECTS

TTC Subway Delays: Who's Really at Fault? | SQL, Tableau (portfolio, Tableau) **Oct.-Nov. 2023**

- Collected, cleaned, and analyzed **35,000** records of TTC subway delays to quantify delay statistics and identify problematic stations, the primary causes of delays, and time-dependent trends using MySQL Workbench. Provided recommended actions for improving future delays.
- Designed and developed an interactive Tableau dashboard that highlights the leading causes of delays, revealing that nearly **70%** of delays are caused by patrons and that this number is on the rise.

SQL skills: data cleaning, numeric functions, date functions, join, case, order by, group by, where, having
Tableau skills: aggregates, line graphs, bar graphs, dual axes, treemaps, interactive filters, YOY and MOM metrics

EXPERIENCE

Graduate Research Analyst **Jan. 2016 – Jun. 2023**
University of Toronto *Toronto, ON*

- Developed analytical techniques to classify unknown stars using statistical techniques, data modeling, and regression analysis, discovering **87** new young stars and increasing young star identification by **80%**.
- Performed exploratory analysis on **300 GB** of data using data visualization software, statistical analysis, regression analysis, and data modeling, discovering new magnetic filaments and winning **$15,000** in funding.
- Collected, cleaned, and transformed **6,500,000 records** and **1,000 columns** of raw star data using SQL.
- Authored reports using compelling storytelling and data visualizations published in high-impact journals.
- Mentored an undergraduate student on a successful year-long data-driven project through to publication.
- Communicated findings at 7 professional conferences, winning 3 presentation prizes.
- Communicated advanced astronomy and programming concepts in accessible language for **17** undergraduate tutorials, receiving strong positive feedback from students and colleagues.

Undergraduate Research Analyst (GitHub) **May – Aug. 2016**
University of Toronto *Toronto, ON*

- Designed and built an automated Python pipeline to clean, transform, and analyze **1,500 images** in **3 months**.
- Generated new tabulated data consisting of **150,000 records** for scientific use employing Bash shell scripting.

Undergraduate Research Analyst **Jun. – Aug. 2015**
Leiden University *Leiden, NL*

- Designed and bult an automated Python pipeline to transform and analyze complex data using statistical techniques and regression analysis, significantly reducing processing time.
- Implemented automated data visualizations using Matplotlib to enable real-time interactive data analysis.

Undergraduate Research Analyst **Sep. 2013 – Aug. 2014**
University of Toronto *Toronto, ON*

- Cleaned and transformed data of **100** young stars using Python.
- Modeled data using statistical techniques and regression analysis, and identified trends in the data.
- Authored a report published in a high-impact journal and presented results at a professional conference.

EDUCATION

University of Toronto **Jun., 2023**
PhD, Astronomy & Astrophysics *Toronto, ON*

University of Toronto **Jun., 2016**
BSc (Honours), Astronomy & Physics *Toronto, ON*

SKILLS

- **Certificates:** The Complete Oracle SQL Certification; Tableau Desktop Specialist & Certified Data Analyst; Microsoft Excel Certification
- **Skills:** Python (NumPy, SciPy, Matplotlib); SQL; Tableau (interactive dashboards); MS Office Excel (PivotTable, VLOOKUP, data validation); data cleaning; quantitative analysis; data visualization; regression analysis; written communication; oral communication