





CALVIN CHAN

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TECHNICAL SKILLS

Languages: Python, SQL, R, LaTeX, Markdown

Libraries: NumPy, Pandas, SciPy, SymPy, Matplotlib, NLTK

Database Management: MySQL

Data Visualizations: Tableau

Version Control: Git

EDUCATION

BrainStation | Professional Certificate, Data Analytics

2023

University of Toronto | Honours Bachelor of Science, Physics & Astrophysics and Psychology

2017 - 2023

PROJECTS

BrainStation | *Final Project*

September 2023 – October 2023

A final project as part of the data analytics course, using Letterboxd movie reviews to draw insights for industry professionals, content creators, and platform creators in understanding audience sentiment, engagements, and trends.

- **More than 77% of the written reviews are comments**, following a sentiment analysis through a Lexicon-based approach NLP technique in Python using the NLTK package. This resulted in most reviews being marked as neutral instead of positive or negative sentiment, consistently aligning with our findings.
- **Drama-categorized movies generate over 50% more reviews** on the Letterboxd platform than any other category after an SQL and Tableau analysis. **Recommend promoting and engaging in drama-related films to increase platform traffic.**
- Pre-covid and post-covid analysis through SQL scripting and Tableau indicates **the pandemic's significant negative impact on comedy-based movie** reception and engagement. This is highlighted by a dramatic shift in sentiment and engagement starting in 2019.

Canadian Institute for Theoretical Astrophysics | *Undergraduate Researcher*

September 2020 – December 2020

Thesis project co-supervised by Professor Ue-Li Pen and Dr. Luke Pratley on recovering dispersion measure (DM) time series and detecting possible signs of gravitational microlensing in the interstellar medium (ISM).

- A cross-correlational analysis between DM and signal intensity of pulsar J2219+4754 **resulted in a Pearson coefficient of 0.63, indicating a high correlation for the possibility of microlensing** caused by ISM over large timescales. Utilizing Python for time series analysis and applying statistical techniques for results.
- Demonstrating **oral and written skills** through research objectives, literature reviews, proposals, reports, and presentations along with developing **strong communication skills** through meetings.
- **Collaborating with supervisor and research group**, implementing research methodology using appropriate techniques.

EXPERIENCE

Dunlap Institute for Astronomy & Astrophysics | *Summer Research Internship*

May 2020 – August 2020

Interned at the Summer Undergraduate Research Program (SURP) working on testing new reconstruction algorithms on rotation measure data from complex magnetized mediums.

- A **300% increase in reconstructed output signal** using a wavelet prior compared to a Dirac prior for Faraday thick structures through a simulation analysis using Python in Jupyter.
- Experienced in working with individuals from diverse backgrounds. **Adaptable and reliable**, meeting project expectations with minimal supervision.
- **Conducting an assortment of data analytical tasks**, progress reports, and team meetings.