Jordan Bell

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jordanbell2357 • jordanbell2357 • Credly Profile

Data Analyst

Experienced Data Scientist with a Master of Science in Mathematics, specializing in geospatial and time series data analysis and operational SQL data pipeline development. Exceptional at producing top-quality visualizations, descriptive statistics, supervised learning predictive models, and time series analysis and forecasting. Solid command line and systems administration experience.

Key Skills

Data Analysis: Skilled in data cleaning and engineering.

SQL Development: Experienced in SQL data pipeline development.

Data Modeling: Skilled in constructing data models for various use cases.

ETL Processes: Skilled at designing and implementing ETL (Extract, Transform, Load) processes.

Machine Learning: Regression, classification, clustering, deep learning, anomaly detection, large language models (LLM).

Feature Engineering: Skilled in feature engineering for time series and geospatial machine learning.

Time Series Analysis: Skilled in classical time series analysis using SARIMAX.

Geospatial Analysis: Expert in conducting geospatial data analysis.

Data Documentation: Experienced in data documentation and stewardship.

Technical Training: Proficient in developing and delivering technical training programs.

Professional Experience

Canadian Tire **Toronto**
Data Science Associate *June 2022–August 2023*

- Developed store similarity metrics comparing store sales at any level of aggregation of product.
- Participated in planning and creating pipeline for Google Analytics page view data into OLAP database, for store similarity calculations
- Orchestrated the integration of geospatial census data and Environics data, linking regional characteristics to surrounding Canadian Tire stores by postal code to inform strategic business decisions.
- Developed a robust and dynamic OLAP database table view to produce a dashboard for monitoring dealer participation in promotional deals. This involved complex windowing functions and time span standardization using step functions for variable deal lengths, facilitating real-time and historical analysis.

Consilium Crypto **Toronto**
Data Science Intern *January 2019–April 2019*

- Engineered a novel approach to feature engineering for time series data, integrating price and volume data from multiple cryptocurrency exchanges with blockchain transaction data to enhance predictive model robustness.
- Designed and tested a logistic regression model to analyze Ethereum data, identifying key indicators that influence price and volume movements.
- Utilized domain knowledge to select significant time periods revered by the trading community, which informed the feature engineering process and enriched the model's predictive power.

Jordan Bell Tutoring **Toronto**
Mathematics Tutor *January 2021–June 2022*

Toronto Elite Tutorial Services **Toronto**
Mathematics Tutor *March 2018–January 2021*

University of Toronto **Toronto**
Mathematics Course Instructor *April 2013–April 2017*

- Mentored students and developed course materials.
- Organized teaching assistant duties, time allocation, and preparation of materials for use in tutorials.
- Instructor for multivariable calculus, ordinary differential equations, and linear algebra courses, as single instructor and as part of multiple section courses (first and second year courses with versions for different programs).

University of Toronto **Toronto**
Mathematics Teaching Assistant *September 2009 - April 2013*

- 1st year courses: Calculus for engineers, computer science, biology, and math specialists (separate courses), and linear algebra for engineers and computer science. 2nd year courses: Mathematical writing (essay marking), linear programming, ordinary differential equations for computer science and for math specialists (separate courses). 3rd year courses: Complex analysis, functional analysis, group theory, partial differential equations, dynamical systems. 4th year courses: Nonlinear optimization

Education

Analytics for Business Decision Making (SAS based program) **George Brown College**
Graduate Certificate, Toronto *2018–2019*

Department of Mathematics **University of Toronto**
Ph.D. candidate in mathematics: Candidacy Achieved 2011, Withdrawn 2016, Toronto *2009–2017*
Canada Graduate Scholarships, Doctoral (CGS D)

Department of Mathematics **University of Toronto**
Master of Science, Toronto *2007–2009*
Canada Graduate Scholarships, Master's (CGS M)

Mathematics **Carleton University**
Bachelor of Mathematics, Ottawa *2003–2007*
University Medal in Mathematics

Languages

SQL: MySQL, PostgreSQL, Hive, SparkSQL, Google BigQuery, Oracle, Teradata

NoSQL: Redis, MongoDB

Python: Python programming language

Scripting: Bash scripting and CLI tools such as awk, sed, gnuplot, ImageMagick, ffmpeg, GDAL

Statistical & Data Analysis: R, SAS, Excel, PowerBI DAX and Power Query M

Theoretical: Automata theory and regular expressions, relational algebra

Software and Platforms

Software
Hitachi Pentaho
Talend
KNIME
PowerBI and DAX Studio, Tableau, MicroStrategy
Excel, Google Sheets
ArcGIS, Mapbox, CARTO
Linux shell scripting
git, SSH, PGP
Docker
VMware, Virtualbox
Lucidchart, Oracle SQL Developer
Microsoft Teams, SharePoint
Cisco Packet Tracer, Wireshark

Platforms
Amazon S3
Microsoft Azure
Google Cloud Platform
Databricks
Cloudera
Teradata
Oracle
Elasticsearch
Datadog
Redis
Google Analytics
Atlassian Bitbucket, Confluence, Jira
H2O

Python Libraries Working Experience

Data Manipulation: NumPy, pandas, PySpark, Dask, imageio, librosa

Data Modeling: Pydantic, erdantic, SQLAlchemy

Visualization: Matplotlib, Seaborn, Graphviz

Regression, Classification, & Clustering: sklearn, scipy.spatial

Deep Learning: Keras, TensorFlow, PyTorch

Time Series Analysis: statsmodels.tsa, sktime, pmdarima, tsfresh, scipy.signal, scipy.fft

Text Processing: re, sklearn.preprocessing, sklearn.feature_extraction, automata-lib, spaCy, NLTK, Gensim

Geospatial Data: GeoPandas, Rasterio, xarray, h3, Cartopy

Bayesian Estimation: ArviZ, PyMC3

Numerical Mathematics: scipy.integrate, scipy.optimize, Theano

Symbolic Mathematics: SymPy

Selected Personal Projects

USCG NAIS Data Project: `https://github.com/jordanbell2357/uscg-nais-data`

- Analyzed AIS data to estimate shipping activity.
- Created visualizations for maritime traffic data.
- Processed 1-minute frequency AIS message data for 2022 for all vessels in US coastal and inland waters (2.9 billion entries).
- Conducted feature engineering for sessionizing vessel activity.

Canada 2021 Census by Forward Sortation Areas: `https://github.com/jordanbell2357/canada-2021-census`

- Conducted clustering and regression analyses on census data.

Selected Online Courses

Teradata: Intro to Advanced SQL Engine 17.10

Datadog: Fundamentals I

Talend: Data Fabric Explorer

IBM: Containers & Kubernetes Essentials

Cloudera: Modern Big Data Analysis with SQL

Microsoft: Azure Data Fundamentals DP-900 Exam Prep

AWS: Fundamentals by Amazon Web Services

Google: Data Analytics Certificate

The Linux Foundation: Open Source Software Development, Linux and Git Specialization

Selected Publications

Bell, Jordan, and Viktor Blåsjö. "Pietro Mengoli's 1650 Proof that the Harmonic Series Diverges." *Mathematics Magazine* 91, no. 5 (2018): 341–47. `https://doi.org/10.1080/0025570X.2018.1506656`. 2019 recipient of the Carl B. Allendoerfer Award, MAA.

Andrews, George E., and Bell, Jordan. "Euler's Pentagonal Number Theorem and the Rogers-Fine Identity." *Annals of Combinatorics* 16 (2012): 411–420.`https://doi.org/10.1007/s00026-012-0139-4`

Bell, Jordan. "A Summary of Euler's Work on the Pentagonal Number Theorem." *Archive for History of Exact Sciences* 64, no. 3 (2010): 301–73.`https://doi.org/10.1007/s00407-010-0057-y`

Bell, Jordan, and Brett Stevens. "A Survey of Known Results and Research Areas for n-Queens." *Discrete Mathematics* 309, no. 1 (2009): 1–31. `https://doi.org/10.1016/j.disc.2007.12.043`. Cited by 250+ publications.