Alex Polenberg

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Summary

Applied mathematician with expert-level knowledge in math, statistics, and programming, seeking data-driven positions. Over 3 years of expertise utilizing advanced analytical techniques to derive actionable insights from complex datasets. Proficient in developing and implementing machine learning and statistical models for hypothesis-driven experiments. A detail-oriented and visually adept investigator known for delivering comprehensive reports to technical and non-technical audiences.

Education

University of Iowa — May 2019—May 2023
Doctor of Philosophy
Applied Mathematics

University of Iowa — Aug 2017—May 2019
Master of Science
Mathematics

Experience

Data Analytics Consultant — Jun 2023—Present
Avalon AI

- Designed a database system to efficiently manage and store incoming streams of data from partnered hospital systems.
- Implementing a robust data processing pipeline utilizing SQL and Python/PySpark to efficiently extract, clean, and manipulate intricate healthcare data, ensuring reliability and reusability in further analysis.
- Processing unstructured text data, utilizing NLP tools like spaCy.
- Leading all data analytics work, driving projects funded under a $200,000 grant.
- Building dashboards to visualize analysis; communicating solutions directly with the CEO.

Principal Investigator — Jun 2020—Jun 2023
Doberman Pinscher Club of America, University of Iowa

- Authored a proposal to secure $20,000 in funding for novel machine learning approaches to genetic studies.
- Automated the collection and cleansing of extensive genetic datasets from disparate sources, saving hours of time while strictly adhering to budgetary limitations.
- Successfully implemented innovative machine learning algorithms and statistical models, enabling the utilization of over 3,000 unlabeled samples for analysis.
- Identified and characterized 5 novel genes linked to Doberman heart disease by building regression, clustering/outlier detection, and classification models.
- Constructed dashboards to convey actionable findings to biomedical professionals, catalyzing their in-depth investigation and subsequent research in the field.

Graduate Assistant — Aug 2017—Jun 2023
University of Iowa

- Developed and executed strategic plans to foster interactive discussions on mathematical concepts, ensuring a high level of engagement among students.
- Distinguished as a highly effective communicator, as evidenced by outstanding evaluations from students in courses such as Calculus II, Engineering Math II, and Quantitative Reasoning for Business.
- Recipient of a prestigious teaching award in recognition of exceptional instructional abilities and dedication to student success.

Mathematics Tutor — Aug 2017—Jan 2023
Math Platoon, University of Iowa

- Founding member of "Math Platoon", a commendable initiative offering free tutoring services to military-connected students, fostering academic support and empowerment within the community.
- Achieved a remarkable success rate by assisting 100% of students in earning passing grades, with a significant majority attaining C+ or higher, reflecting a strong commitment to impactful mentoring.

Technical Skills

Programming, Software, & Tools

- Python, R, Rust, Matlab
- Linux, Git, Bash, Excel, SQL

Awards & Honors

Ballard & Seashore Fellow — Spring 2023
University of Iowa

Outstanding Mathematics Teaching Assistant — Fall 2018
University of Iowa