ALEX FRIEDRICHSEN

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Highly motivated, growth-driven early career professional adept at statistical analysis, data visualization, data mining, and machine learning model optimization. Hands-on experience communicating complex data insights.

SKILLS

- **Programming Languages:** Python, SQL, R, C#, C++, Java, JavaScript, HTML, CSS, SAS, Julia
- **Skills**: Tableau, Google BigQuery, GitHub, Git, Machine Learning, Analytics, Analytical Reasoning, Amazon Web Services (AWS), Data Visualization, Relational Databases, Strategic Analysis, Jupyter Notebooks, Google Collab, Agile Development, DevSecOps, Statistical Modeling, Excel, PowerPoint, Google Suites, Zotero citation manager, Slack, LaTeX, Spanish, French
- **Relevant Coursework**: Machine Learning, Modeling Complex Systems, Data Structures & Algorithms, Game Theory, Data Science I/II, Linear Algebra, Multivariate Statistics, Advanced Macroeconomic Theory, Data Mining

EXPERIENCE

Researcher and Software Developer – *Social Ecological Gaming and Simulation Lab*   August 2022 – Present

- Develops precision agriculture software using Python, C#, and JavaScript in Unity and Google Earth Engine and implements modular solutions to mapping problems through proprietary applications.
- Collaborates in large software development team using GitHub, Slack, and Notion online environments.

Public Health Analyst I – *Vermont Department of Health*   February 2019 – September 2021

- Wrote SAS scripts and Excel macros to automate monthly data dumps saving over 10 hours of per month.
- Authored and published data products using stat software (SAS, R) for dissemination to key stakeholders.
- Attended conferences and national calls to coordinate efforts with out-of-state analysts.
- Abstracted data from death certificates, CME, police, and toxicology reports for the CDC's online system.

Teaching Assistant – *Data Science I, Combinatorics*   August 2020 – December 2021

- Coded Python scripts to automate grading process and assist in online grading while running online class.

PROJECTS - (Personal Website and Project Portfolio https://alexanderfriedrichsen.github.io)

- *Julia, Python* – Evolutionary Machine Learning for Robust Facility Placements. Won 2nd place in 2022 UVM CS Fair.
- *Python* – Deepfake Spread Agent-Based Model – leveraged Mesa library in Python to model the spread of videos over social networks. Won 2nd place in the 2021 UVM CS Fair.
- *Python* – Poker Hand-History Project – Leveraged Pandas to clean and engineer features on a dataset of 50,000 hands, built random forest and regression machine learning models with scikit-learn to improve my poker profits.
- *Python* – Vaccine Hesitancy – Acquired web data and coded natural language processing to analyze sentiment.
- *Python* – Evolutionary Robot – Used an evolutionary machine learning algorithm to train a modular robot to walk.
- *R, SQL* – Climbing Statistical Analysis – Analyzed 4-million climbs using PCA, QDA, K-Means, and classification trees.

EDUCATION

M.S. Data Science and Complex Systems – *University of Vermont Complex Systems Center*   May 2023

- *4.0 GPA*

B.S. Data Science – *Honors College, College of Engineering and Mathematics*   May 2022

- *Minors in Economics, Mathematics, Computer Science, and Statistics.*

ORGANIZATIONS

Treasurer – *Computer Science Crew*   August 2018 – December 2022