ALEX FRIEDRICHSEN

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I am looking for a role where I can learn, engage, network, analyze, optimize, and hone my skills.

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, Data Science I, Linear Algebra, Multivariate Statistics, Evolutionary Computation, Advanced Macroeconomic Theory, Game Theory

EXPERIENCE

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

- Develops new precision agriculture software using Python, Unity, C#, and JavaScript.
- Implements modular solutions to mapping applications.
- Collaborates in large software development team using GitHub.

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

- Wrote SAS scripts to automate data entry for monthly data dumps saving 10 hours of time per month.
- Created and published data products using statistical software (SAS, R) for dissemination to key stakeholders.
- Helped develop GIS REST services database using Python backend.
- Attended conferences and national calls to coordinate efforts with out-of-state analysts.
- Abstracted data from hundreds of death certificates, coroner reports, police reports, and toxicology reports into the National Violent Death Reporting System (NVDRS) and State Unintentional Drug Overdose Reporting System (SUDORS).

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

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

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.*

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

- *Julia, Python* – Evolutionary Machine Learning for Robust Facility Placements. Won 2nd place in the 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 Analysis – Scraped web data and used natural language processing to analyze sentiment.
- *Python* – Evolutionary Robot Sim – Used evolutionary machine learning algorithms to train a modular robot to walk.
- *R, SQL* – Climbing Statistical Analysis – Analyzed 4-million climbs using PCA, QDA, K-Means, and classification trees.

ORGANIZATIONS

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

- Organized meeting agendas and facilitates meetings, contacts and schedules presenters from Burlington companies, manages budget through student government association meetings. Tripled active members in club.

UVM Competitive Climbing Team – *MetroRock Vermont* August 2020 – Present

Pianist and Keyboardist – *The Kyne Band, Solo Pianist, Accompanist* June 2021 – Present