ALEX FRIEDRICHSEN

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EDUCATION

University of Vermont, Burlington, Vermont   Anticipated M.S. Graduation May 2023
Accelerated M.S. Data Science and Complex Systems

B.S. Data Science – College of Engineering and Mathematics, Honors College, **GPA 3.60**   May 2022
Minors: Economics, Mathematics, Computer Science, Statistics

- **Programming Languages**: Experience in Python (Pandas, NumPy, SciPy, Mesa, Scikit-learn, matplotlib, Jupiter/Collab, Plotly, Tensorflow, keras, requests), C++, R (ggplot2, dplyr, knitr, Markdown), SQL (MySql, BigQuery, SQLite), and SAS
- **Skills**: Principal Component Analysis, computational (recurrent) neural networks, k-mean clustering, model discretization, Multivariate ANOVA, cellular automata visualization, Windows, MS Word/Excel/PowerPoint/OneDrive/Outlook, Google Drive/Sheets/Calendar, Zotero citation manager, Slack/Discord/Zoom/Teams, LaTeX, Basic Spanish, Basic French
- **Notable Coursework**: Machine Learning, Principles of Complex Systems, Modeling Complex Systems, Data Structures & Algorithms, Data Science I, Advanced Programming, Chaos Theory, Linear Algebra, Calculus I-III, Statistical Methods II, Game Theory, Evolutionary Robotics, Multivariate Statistics.
- **Honors College Thesis:** UVMxGoogle OCEAN project: Reviewing relevant team dynamics and OSS literature through an in-depth literature review. Building citation networks and developing and cleaning a 100000+ node dataset. Using statistical modeling and machine learning to ask questions, describe, analyze, and predict the contents of bidirectionally linked academic papers and repositories

EXTRACURRICULARS AND PROJECTS

- **Projects**:
    - Cleaned data from 50000+ poker hand-histories engineered data in pandas; built random forest/linear/logistic regression machine learning models and drew conclusions that improved my home game profits
    - Coded an "8-bitifier" in C++ using OpenGL for .jpg
    - Coded a playlist organizing system with data from Last.fm
    - Deepfake spread agent-based modeling using Mesa
    - Vaccine hesitancy sentiment shift analysis
    - Assisted in coding and designing Arcane: A Top Down RPG through Unity Engine
- **Extracurriculars:**
    - Grading Assistant – Combinatorics, Data Science I: Graded assignments and provided feedback.
    - 1in4 - Publicity Coordinator: Manages club Instagram page, Flyers (Canva), and logo design. Books rooms for presentations and requests meeting speakers.
    - Computer Science Crew – Treasurer: Organizes meeting agendas and facilitates meetings, contacts and schedules presenters from Burlington companies, manages budget through student government association meetings. Tripled active members in club.
    - Aspiring competitive climbing at Metrorock VT 2020 - current
    - Piano experience: participates in pit bands, recitals, band concerts, and charity events for over 10 years.

PROFESSIONAL EXPERIENCE

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

Operated efficiently in an agile modeled work environment. Abstracted data from death certificates, autopsies, medical examiner reports, police reports, and toxicology reports for the state unintentional drug overdose reporting system (SUDORS). Entered and cleaned SUDORS data for quality control inside the national violent death reporting system (NVDRS). Analyzed data and created data products for dissemination to key stakeholders. Worked in office and from home through Covid-19 self-supervising to meet project deadlines. Helped develop GIS REST services database using python. Checked and wrote SAS code for data products.

The Boardroom Board Game Café, Burlington, Vermont   September 2021 – December 2021
Game Education & Server:

Welcomed customers and suggested catered recommendations for games. Taught customers games. Delivered food, managed register, and was responsible for cleaning while opening and closing restaurant.