

# ALEXANDER 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:** Agile Development, Amazon Web Services (AWS), Analytical Reasoning, Analytics, Data Visualization, Data Warehousing, DAX, DevSecOps, Excel, French, Git, GitHub, Google BigQuery, Google Collab, Google Suites, Jupyter Notebooks, LaTeX, Machine Learning, Power BI, PowerPoint, Relational Databases, Sharepoint, Slack, Spanish, Statistical Modeling, Strategic Analysis, Tableau, Zotero
- **Relevant Coursework:** Data Mining, Data Science I/II, Data Structures & Algorithms, Game Theory, Linear Algebra, Machine Learning, Modeling Complex Systems, Multivariate Statistics

## EXPERIENCE

### Software Engineer II – BAE Systems

August 2023 – Present

- Developed a comprehensive data model and schema design within Power BI, integrating multiple data sources. Implemented DAX aggregation functions to generate scalar results at query time. Utilized the model to create dashboards crucial for high-level managers and stakeholders, facilitating informed labor and product line management decisions weekly.
- Develops and maintains front and back end of internal staffing needs and needing work sharepoint sites and MS Access databases (HTML, Sharepoint, JavaScript). Created associated Power BI dashboards.

### Researcher and Software Developer – Social Ecological Gaming and Simulation Lab

August 2022 – July 2023

- Developed precision agriculture software using Python, C#, and JavaScript in Unity.

### 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.
- 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 [honestafblog.com/portfolio](https://honestafblog.com/portfolio), in progress)

- *Julia, Python* – Evolutionary Machine Learning for Robust Facility Placements. Published in GECCO '23.
- *Python* – Deepfake Spread Agent-Based Model – leveraged Mesa library in Python to model the spread of videos over social networks. Won 2<sup>nd</sup> 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.

## EDUCATION

### M.S. Data Science and Complex Systems – University of Vermont Complex Systems Center

August 2021 – May 2023

- Top 10% of Program

### B.S. Data Science – Honors College, College of Engineering and Mathematics

August 2018 – May 2022

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

## ORGANIZATIONS

### Treasurer – Computer Science Crew

August 2018 – December 2022

### Team Captain – Magic: The Gathering team for \$500,000 Pro Tour events testing

August 2022 - Present