Tyler Wied

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Data Science Skills

- **Programming**: Python, SQL, R, Unix/Bash, MPI, LaTeX, HTML
- **Machine Learning & Statistics**: logistic and linear regression, random forests, support vector machines, principal component analysis, k-means clustering, natural language processing, network analysis, feature engineering, modeling and simulations, bootstrap, ANOVA, χ^2 test, A/B testing
- **Tools**: pandas, scikit-learn, NumPy, Jupyter, Matplotlib, Seaborn, Git, gensim, NLTK, Dash

Experience

- **Insight Data Science** — Seattle, WA
  Data Science Fellow — *Jan 2019 - Present*
  - Consulted for a cryptocurrency hedge fund to identify trends across five key cryptocurrencies.
  - Developed project roadmap and architected solution using **machine learning** (NLP, topic modeling, sentiment analysis, network analysis).
  - Delivered results in an interactive dashboard that displays networks, attitude levels, and the top 20 topics across **200k+ Tweets and 25k+ Twitter users**.
- **Johns Hopkins University School of Medicine** — Baltimore, MD
  Post-Doctoral Research Fellow & PhD Candidate — *2012 - 2019*
  - Discovered important flexibility in a protein essential for cognitive function from **10+ TB of simulation data**, numerical analysis, and **unsupervised machine learning** (principal component analysis).
  - Developed algorithm to **automatically classify** millions of simulation "snapshots" into discrete states, enabling the reduction of simulation results to an intuitive single number.
  - Wrote **custom Python scripts** to validate simulation results with comparisons to real-world observations (χ^2 test), with a **6-fold improvement** over previous predictions.
  - Built pipeline to **parallelize** hundreds of simulations on **cluster compute nodes** (MPI).
  - Collaborated cross-functionally to identify the most promising targets in a toxin study by combining features from diverse datasets, **reducing search space more than 90%.**
  - Leadership and communication: trained and led a team of undergraduate and graduate students. Served as tutor to 15+ students in two graduate-level biophysics courses.
- **University of Wisconsin-Madison** — Madison, WI
  Research Assistant — *2009 - 2012*
  - Developed first genetic mouse model of mania, which is now used to understand mania in humans.
  - Conducted behavioral experiments for hyperactivity and identified **15+ statistically significant** indicators of mania (one-way ANOVA).
  - Isolated the individual contributions of key features affecting DNA stability across more than 50 experimental conditions in MATLAB, enabling prediction with those features in future studies.

Education

- **Johns Hopkins University School of Medicine** — Baltimore, MD
  PhD, Biophysics (National Science Foundation Graduate Research Fellow) — *2012 – 2018*
- **University of Wisconsin-Madison** — Madison, WI
  BS, Biochemistry (Honors in Research) — *2008 – 2012*