

# Tyler Wied

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## DATA SCIENCE SKILLS

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- **Languages:** Python, SQL, R, bash
- **Machine Learning & Statistics:** Supervised and unsupervised learning, Dimensionality Reduction, Natural Language Processing, Network Analysis, Feature Engineering, Modeling and Simulations, Time Series, Monte Carlo, bootstrap, ANOVA,  $\chi^2$  test, A/B testing
- **Tools:** NumPy, pandas, Git, Scikit-learn, gensim, Nltk, Dash, Jupyter, Matplotlib
- **Computing:** High-performance and parallel computing, Unix, SSH

## EXPERIENCE

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- **Insight Data Science** Seattle, WA  
*Data Science Fellow* Jan 2019 - Present
  - Consulted for a cryptocurrency hedge fund to build a webapp that structures Twitter activity data related to cryptocurrencies by identifying trending accounts, topics, and gauges community-level attitudes.
  - Scraped 200k+ Tweets and used **network analysis** to construct graphs, identify central nodes, and detect communities.
  - Used **NLP** to identify topics of conversation (**LDA with tf-idf**), and performed **sentiment analysis** on Tweets to quantify user attitudes.
  - Built webapp with Dash to **visualize and interact** with results to discover actionable information.
- **Johns Hopkins University School of Medicine** Baltimore, MD  
*Post-Doctoral Research Fellow & PhD Candidate* 2012 - 2019
  - Collected and processed **10+ TB of simulation** data (python, bash, Tcl) to understand glutamate receptor function at an atomic-level. Conducted numerical analysis to **classify** simulation snapshots into discrete states (numpy), calculate physical properties, and perform **principal component analysis** to identify major modes of motion (R).
  - Discovered novel flexibility in the GluK2 glutamate receptor using physics-based simulation methods; successfully validated simulation-based model with  **$\chi^2$  goodness-of-fit test**.
  - Delivered data-driven recommendations for future toxin research from analysis of mutation and simulation datasets, **reducing search space approximately 90%**.
- **University of Wisconsin-Madison** Madison, WI  
*Undergraduate Research Assistant* 2009 - 2012
  - Developed and validated a new mouse model for mania for a line of mice that are 2x more active than control mice. Collected and extracted data from mouse behavioral experiments for hyperactivity, and performed **one-way ANOVA** tests to identify differences between control and experimental mouse groups.

## EDUCATION

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- **Johns Hopkins University School of Medicine** Baltimore, MD  
*PhD in Biophysics* 2012 - 2018
- **University of Wisconsin-Madison** Madison, WI  
*BS in Biochemistry* 2008 - 2012