

## SUMMARY

- Data scientist with 8+ years of experience in modeling, computational research, experimental design
  - Experienced in large-scale data wrangling, statistical analysis, machine learning, and visualization using Python
  - Demonstrated abilities to initiate and lead collaborative projects through graduate school leadership roles
- 

## EDUCATION

**University of Chicago** (Chicago, IL): *PhD Physical Chemistry, Advisor: Gregory Voth* December 2021

- *Fellowship*: Department of Energy Computational Sciences Graduate Fellowship (selective; <5% acceptance)
- *Thesis focus*: Used computer simulations and statistical analysis to understand mechanisms of proton transport in biomedically relevant and designed proteins, in collaboration with experimentalists

**Washington University in St. Louis** (St. Louis, MO): *B.A. in Chemistry* May 2015

---

## WORK EXPERIENCE

**Kemper Insurance** (Chicago, IL) *Data Scientist 2* January 2022-present

- Builds Natural Language Processing (NLP) models in TensorFlow to predict car accident characteristics based on free-form descriptions, as part of first team in the department to develop and execute NLP capabilities
- Develops generalized linear models (GLM) auto insurance pricing models under strict regulatory standards, subsequently expands these models for internal use to better understand customer segmentations
- Contributes to team code base, including a Python class to automate the creation of excel spreadsheets with hundreds of tabs and complex figures shared with business partners

**University of Chicago, Department of Chemistry** (Chicago, IL)

*Graduate Researcher, Laboratory of Professor Gregory Voth* 2015-2021

- Researched mechanisms of proton transport in influenza A M2 to provide insight for drug-design efforts by running simulations on supercomputer clusters and performing analysis using Bash, Python, statistical mechanics
- Designed and managed independent research projects, communicated results to non-technical experimentalists
- Exploratory analysis in Python of ~1TB simulation data, developed new method for quantifying protein changes correlated with proton position, explained drug efficacy; resulted in four publications in top chemistry journals

*Teaching Assistant for General Chemistry* 2015-2016

- Led weekly discussion sections, laboratory experiments; received teaching award given to top 3 TAs

**Los Alamos National Laboratory** (Los Alamos, NM) *Visiting Research Assistant, with Staff Scientist Art Voter* Fall 2017

- Used DBSCAN clustering and one-class support vector machine (SVM) anomaly detection to classify sampled points in real-time during a simulation, written as Python module using scikit-learn. *See walkthrough on my website*
- 

## SELECT LEADERSHIP ACTIVITIES

**Co-chair of Chemistry Department Culture Committee**, University of Chicago 2018-2019

- Crafted vision and set direction for faculty and student committee, planned biweekly meetings
- Resulted in department Value Statement, Mentorship Guidelines, and critical policy improvements

**Chemistry Department Ombudsperson**, University of Chicago 2018-2019

- Organized department student mentorship program, led new initiatives, discussed ideas with Chair
- 

## TECHNICAL SKILLS AND COURSEWORK

**Programming:** Python 8+ yrs (NumPy, Pandas, TensorFlow, Jupyter, Matplotlib, scikit-learn), SQL, Bash, C++, MPI

**Machine Learning:** GLMs, neural networks, NLP, SVM, clustering

**Coursework:** Machine Learning, Algorithms, Advanced Statistical Mechanics, High Performance Computing, Numerical Analysis for Statistics and Applied Mathematics, Stochastic Simulation, Quantum Mechanics