ALLISON DZUBAK

allisondzubak@gmail.com | 515-710-8699 | Portland, ME | allisondzubak.com | allison-dzubak

EXPERIENCE

Chemistry Domain AI Trainer
Scale AI Independent Contractor

Jan 2024 – Present | Remote

- Provide reinforcement learning feedback to AI models regarding chemistry topics

Applied Data Science Program Participant
MIT Professional Education

Nov 2023 – Mar 2024 | Remote

- Attended 2.5 hour lectures with MIT faculty 3x/week and 2 hour mentored sessions 2x/week with industry data scientists covering theory and implementation of machine learning approaches in clustering, regression, classification, decision trees, time series, neural networks, and recommendation systems
- Completed weekly case studies, elective projects, and presented a final capstone project on facial emotion recognition using convolutional neural networks

Assistant Professor of Computational Chemistry
Bowdoin College

July 2019 – Feb 2023 | Brunswick, ME

- Balanced competing research, teaching, and service demands resulting in a successful reappointment towards tenure
- Developed models to reduce computational scaling of quantum chemical simulations resulting in 14 peer-reviewed publications to date
- Set up and directed research lab with a budget of $40K/year comprised of 4 undergraduate students whom I trained and mentored
- Communicated technical findings by generating visualizations of data, having presented at 20+ conferences and workshops in 5 countries
- Assessed the feasibility and merit of proposed research, resulting in 1 faculty candidate hire and approximately $270K/year of faculty funding
- Facilitated inclusive classroom and meeting spaces to enhance participant experiences using smart rooms and presentation technology, having taught approx. 150 students

Postdoctoral Research Fellow - Materials Science and Technology Division
Oak Ridge National Lab

Feb 2016 – Feb 2019 | Oak Ridge, TN

- Proposed new direction for materials theory group, crafted proposal, and was awarded 1.7 million core hours on Titan and 100K core hours on Eos machines for project exploration
- Quantified the magnitude of errors associated with approximations implemented in our quantum Monte Carlo code, enabling the group to focus resources on the most severe approximation

Graduate Research Assistant - Department of Chemistry
University of Minnesota

2009 – 2015 | Minneapolis, MN

- Presented collaborative research to DOE program managers 5 times over 3 years contributing to the $30 million carbon capture center renewal
- Defended research using multireference wavefunction methods for metal-organic framework modeling, receiving the American Chemical Society Chemical Computing Group research excellence award and the department annual award for doctoral thesis excellence

SKILLS

Data Analysis & Visualization, Coding
Python (sklearn, tensorflow, keras, statsmodels, numpy, pandas, matplotlib, seaborn), Command line, Git, Power BI, Tableau, PyCharm, Jupyter, SQL, Mathematica, Excel

Machine Learning Methods
Dimensionality Reduction, Feature Engineering, Clustering, Regression, Ensemble Methods, Deep Learning / Convolutional Neural Networks

Cloud Computing
Google Colab

Web Design & Hosting
HTML, CSS, Bootstrap, Nginx, Raspberry Pi Server

High-Performance Computing
Quantum chemical modeling

Algorithm Development
Monte Carlo Methods, Coarse Graining, Wavefunction Optimization Techniques, Force Field Development

Collaboration & Communication
LaTeX, Microsoft Office Suite, Digital interactive whiteboards, Video creation, Slack, Teams, Trello

Training & Mentoring
Universal design for learning, scaffolding, mental health first aid

Technical Writing
Software documentation, Research highlight slide decks, Journal publications, Grant proposals

EDUCATION

Ph.D. in Computational Chemistry
University of Minnesota

2009 – 2015 | Minneapolis, MN

B.A. in Chemistry
University of Minnesota

2005 – 2009 | Minneapolis, MN