HUA WALLY XIE

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wallyxie

SELECTED WORK EXPERIENCE

Kite Pharma | **Quality Engineer III - Statistician** Santa Monica, CA
Skills: Python, Bash, Git, JMP, AWS, Veeva Vault, GMP regulatory competencies Jan. 2023 - current

- Conducting data analyses in AWS cloud environments to inform Quality leadership decisions regarding cell therapy assay development and product manufacturing; results communicated include statistical rejection of universal Jurkat cell control limit feasibility and support for performance of approved treatment centers.
- Authoring global Quality policy documentation guiding governance, analysis, trending, modeling, and reporting of GMP data pursuant to FDA and EMA cGMP guidance and regulations.
- Quality participant of Gilead's initiative to evaluate large language models (LLMs); comparing AWS and Azure LLM frameworks for Gilead use and proposing governance measures in anticipation of future agency regulations.

University of California | **Graduate Student Researcher** Irvine, CA
Skills: Python, R, Stan, Mathematica, Julia, MATLAB, Bash, Git Jun. 2016 - Dec. 2022

- Parameterized and refined stochastic differential equation soil carbon models; resulted in more realistic soil system simulations.
- Created statistical frameworks rigorously assessing the ability of soil carbon models to predict global soil changes.
- Co-developed cutting edge Bayesian deep learning variational inference algorithms for model fitting and parameter estimation.
- Merged and munged large soil experiment data sets spanning decades to compose data products ready for machine learning.

National Institute of Diabetes and Digestive and Kidney Diseases | **Intramural Research Fellow** Bethesda, MD
Skills: Python, Julia, C, R, Stan, Mathematica, Bash Oct. 2013 - Jul. 2015

- Performed computational neuroscience research investigating divisive normalization, a canonical neural phenomenon observed across multicellular organisms including humans.
- Constructed and simulated biophysically realistic neuron population models using a variety of scientific computing tools.
- Developed parallel, distributed Bayesian Markov chain Monte Carlo algorithms assimilating neuron models with empirical data.

RESEARCH PUBLICATIONS AND MANUSCRIPTS

Hua W. Xie, Steven D. Allison, Elizabeth Duan, and Brian Chung. (2024). "Chapter 16 - Advancing quantitative models of soil microbiology, ecology, and biochemistry." In Eldor A. Paul and Serita Frey (Eds.), *Soil Microbiology, Ecology and Biochemistry, Fifth Edition* (pp. 473-492), ed. Eldor A. Paul and Serita Frey. Elsevier.

Hua W. Xie, Debora Sujono, Tom Ryder, Erik B. Sudderth, and Steven D. Allison. (2023). "A framework for variational inference and data assimilation of soil biogeochemical models using state space approximations and normalizing flows." *ESS Open Archive*. Submitted to the *Journal of Advances in Modeling Earth Systems*.

Debora Sujono, **Hua W. Xie**, Steven D. Allison, and Erik B. Sudderth. (2022). "Variational Inference for Soil Biogeochemical Models." *ICML 2022 2nd AI for Science Workshop*.

Hua W. Xie, Adriana L. Romero-Olivares, Michele Guindani, and Steven D. Allison. (2020). "A Bayesian approach to evaluation of soil biogeochemical models." *Biogeosciences*. 17:4043 - 4057.

Shashaank Vattikuti, Phyllis Thangaraj, **Hua W. Xie**, Stephen J. Gotts, Alex Martin, and Carson C. Chow. (2016). "Canonical cortical circuit model explains rivalry, intermittent rivalry, and rivalry memory." *PLoS Comput Bio*. 12:e1004903.

SKILLS AND COMPETENCIES

- Regulatory Competencies: 21 CFR Parts 11, 210, 211, and 820; ICH Q8 (R2), Q9 (R1), and Q10
- Technical Skills: Python (PyTorch, Pandas, Scipy, Numpy), R, Cloud Data Platforms (AWS, Azure, Databricks), SQL

EDUCATION

University of California, Irvine
Ph.D. in Mathematical, Computational, and Systems Biology Nov. 2022
Northwestern University, Evanston
B.S. in Biological Sciences and Radio/Television/Film Jun. 2012