HUA WALLY XIE

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wallyxie

SELECTED WORK EXPERIENCE

Kite Pharma | **Manager, Data Scientist** Santa Monica, CA
Skills: Python, SQL, Databricks, Quick Suite, Tableau, Plotly Jan. 2025 - present

- Engineered an automated data pipeline that transformed Oxford Biomedica vector manufacturing data into intuitive Quick Suite KPI and delivery schedule dashboards, delivering clear, at-a-glance insights guiding Contract Manufacturing Organization (CMO) relationship management and cost containment.
- Revamped Plotly Dash app to improve and clean supply chain planner data entry and deliver On-Time-In-Full (OTIF) supplier performance insights via Tableau dashboards for enablement of supplier performance management.
- Led educational workshops for Global Supply Chain with Community of Data Enthusiast (CODE) presentations, enhancing team proficiency in statistics, machine learning, and AI.
- Developed forecasting application on Databricks for Contract Testing Lab (CTL) management to ensure compliance, inform test scheduling, and empower transparency in vendor relations by proactively identifying items from recent and future expected shipments for material requalification.

Kite Pharma | **Associate Data Scientist** Santa Monica, CA
Skills: Python, R, SQL, Git, Databricks, NLP, unsupervised learning, generative AI, XGBoost Jan. 2024 - Jan. 2025

- Performed spatial and hierarchical unsupervised clustering of textual Kite Quality Control deviations data to inform Quality leadership on accuracy and consistency of human deviation labeling and identify higher quality documents ideal for deviation classification model fine-tuning use.
- Developed scheme for the trending of commercial invalid assay counts from Kite Laboratory Information System data with approximate and simulated contingency table statistical tests; execution of this scheme identified previously unknown data input errors in Kite's data warehouse, which were corrected by Kite Quality Control.
- Assisted Kite Global Supply Chain Packaging Team in designing and executing a study on label application characterization using contingency table tests of independence; study led to a Corrective and Preventative Action (CAPA) which recommended the increase of label cure time to ≥ 2 hours and label application to non-chilled cassettes for label adhesion performance improvement.
- Led an award-winning team in the 2024 Gilead Data Science Hackathon, in which participants were tasked with binary prediction of HIV status in individuals based on insurance claims and demographic data; implemented an ensemble model approach combining deep neural network, boosted decision tree, and Shapley feature selection methods to make explainable and interpretable predictions that resulted in a top three Creativity Award and People's Choice Award finish.

Kite Pharma | **Quality Engineer III - Statistician** Santa Monica, CA
Skills: Python, R, Git, AWS, Veeva Vault, GMP regulations, frequentist statistics Jan. 2023 - Jan. 2024

- Produced technical reports that informed Quality leadership decisions regarding product manufacturing and assay development; results communicated included statistical unfeasibility of universal Jurkat cell control limits and numerical evidence of positive approved treatment center performance.
- Authored global Quality policy documentation guiding GMP data governance, trending, modeling, and analysis pursuant to agency guidance and regulations.
- Quality participant of Gilead's Project GAIA initiative to evaluate large language models (LLMs); compared AWS and Azure LLM frameworks for Gilead use and proposed governance measures in anticipation of future agency regulations.

University of California | **Graduate Student Researcher** Irvine, CA
Skills: Python, R, Stan, Julia, Bash, Git, Bayesian statistics, mathematical modeling, deep learning Jun. 2016 - Dec. 2022

- Developed cutting edge Bayesian deep learning variational inference algorithms for model fitting and parameter estimation.
- Formulated Bayesian statistical frameworks rigorously assessing the ability of soil carbon models to predict global soil changes.
- Parameterized and refined stochastic differential equation soil carbon models; resulted in more realistic soil system simulations.
- Amalgamated and cleaned data from separate soil experiments to construct a meta-analysis data product ready for statistical and machine learning insight extraction.

National Institute of Diabetes and Digestive and Kidney Diseases | **Intramural Research Fellow** Bethesda, MD
Skills: Python, Julia, C, R, Stan, Mathematica, Bash, Bayesian statistics, mathematical modeling 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, Debora Sujono, Tom Ryder, Erik B. Sudderth, and Steven D. Allison. (2025). "A framework for variational inference and data assimilation of soil biogeochemical models using normalizing flows." *Journal of Advances in Modeling Earth Systems*. 17 (8):e2024MS004547.

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.

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 (15):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 (5):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 (Tidyverse), Cloud Data Platforms (AWS, 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

AWARDS AND FELLOWSHIPS

- Gilead Sciences 2024 Data Science Symposium Hackathon Creativity Award
- Gilead Sciences 2024 Data Science Symposium Hackathon People's Choice Award
- UCI Honorary Machine Learning and Physical Sciences Fellow, 2018 - 2019
- National Institutes of Health Predoctoral T32 Training Award Fellowship, 2017 - 2019
- National Science Foundation Graduate Research Fellowship Honorable Mention, 2016 and 2017
- UCI Climate Action Training Fellowship, 2017 - 2018
- UCI Mathematical, Computational, and Systems Biology Fellowship, 2015 - 2016
- National Institutes of Health Intramural Research Training Award, 2013 - 2015