Jeremy Millford
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Education:

University of California, Berkeley - Master of Molecular Science and Software Engineering
GPA (3.927) 2024
University of Texas Health Science Center Houston - 6 credits toward MS Biomedical Informatics
GPA (3.5) 2022
Texas State University – Bachelor of Science in Biology, Minor in Chemistry
GPA (3.21) 2018

Professional Experience:

Company: University of Texas Dell Medical School/MD Anderson (Dept. of Quantitative Oncology and Clinical AI for Precision Medicine) | October 2025-December 2025
Position: Oncology Data Researcher

- Quantitative clinical genomics and proteomics research for rare genetic cancer types.
- Virtual Drug Screen pipeline for receptor-ligand docking, organ specific toxicity, and affordability.
- Large aggregation of publications, public data, and private data sources for analysis and physician decision support.
- Cloud, parallel, and high-performance computing on Texas Advanced Computing Center using Frontera supercomputer and local GB10 Grace Blackwell Superchip.
- Custom multi-AI model integration for clinical data, physician decision assistance, and evidence-based hypothesis generation from patient molecular profile and sequencing data.
- Full Stack Development for genomics and oncology analysis web applications.
- Manuscript, publication, and R01/P01 grant writing.
- Managing multiple undergraduate researcher's efforts and guiding their progress.
- Additional data analysis experience with cell lines, xeno graphs, patient derived models, molecular signature, signaling pathways, drug-gene interaction, and tumor surface-ome.
- Electronic Health Record and National Clinical Trail data analysis.

Capstone project: Berkeley MSSE x BIOVIA (Scientific Software) | January 2025 – June 2025
Role: Molecular Interaction Machine Learning Engineer

- Developed a novel Message Passing Neural Network to predict atom typing for use in atomic bonding and docking. (99.8% accuracy with error attributed to source data, not model)
- Managed tasks for a team of developers that delivered a usable, robust, finished product on time.
- Utilized Github tasks, issues, actions, and project planning tools.

Company: Jumpcode Genomics (CRISPR based start-up) |March 2022 – March 2023
Position: Field Scientist and Account Manager for Central US

- Assisted with molecular and bioinformatic design of custom CRISPR screening assays.
- Collaborated on a daily basis with a variety of principle investigators on experiment design.
- Advised top scientists in industry and academia on CRISPR assisted sequencing and technology.
- Analyzed data from sequencing, single cell spatial, and tissue slide data processing pipelines.

Company: Grifols Pharmaceuticals (Biomat USA) |February 2019 – February 2022
Position: Associate Technical Scientist-Technology, Validation, and Investigation lab

- Routinely designed antibody based pharmaceutical product for manufacturing.
- Personally conducted quality testing on every finished product batch for entire company.
- Designed and executed national scale implementations and validations of new immunoassays, testing platforms, and laboratory equipment for the two largest plasma labs in America.
- Extensive experience working with abnormally high titer category B infectious material including HIV, HAV, HBV, HCV, Parvovirus B19, COVID19, and World Health Organization standards.
- Experience operating, implementing, programing, and writing SOPs for most laboratory equipment platforms.
- Conducted investigation of testing abnormalities and infection outbreak around the country.

Company: Texas State University | Dr. Garcia Lab | August 2016 - December 2018
Position: Undergraduate Research Assistant - (Nervous System/Regeneration Lab)

- Designed and conducted IHC experiments to determine presence of melatonin receptors and beta amyloid cysts in Zebrafish, retina, and brain tissue.
- Worked with confocal and electron microscopes.
- Cared for, sacrificed, and bred laboratory animals.

Coding Experience: C++, C, Python, Pytorch, R, RDkit, scikit-learn, Pandas, CUDA, SQL, Matplotlib, Computer Vision, Natural Language Processing, Data Cleaning and EDA, Regex, Machine Learning Algorithms, LLMs, Data Visualization, PCR, Clustering, and Graph Neural Networks, AWS, Shiny R.

Other Projects:

- Neural networks for atom typing for drug-like molecules
- Neural networks for predicting gene sequences regenerative associations
- Computer vision to classify natural disaster damage type and severity (data science)
- National Energy Research Scientific Computing Center supercomputer parallel computing with MPI, OpenMP, and CUDA
- Drug discovery for malaria treatments
- Quantum chemistry molecular simulations for CNDO, Hartree-Fock, etc.
- Building neural networks and transformers from scratch in Python