

Jacob Merle Gershon

jacobgershon.com

nohsr3g@gmail.com

Experience

Prescient Design, Genentech
Machine Learning Scientist

Feb 2026 - Present

- Post-training structure prediction models.
- Building agentic workflows for drug discovery.

Education

Ph.D. - Molecular Engineering
Institute for Protein Design, University of Washington
Dissertation: *Protein Design at Library Scale*

2025

M.S. - Biomedical Engineering
State University of New York at Binghamton
Thesis: *Enhancing Formation of Stem-cell Derived 3D Cardiac Tissue with Extracellular Matrix*

2021

B.S. - Biomedical Engineering
State University of New York at Binghamton
Honors: *Summa Cum Laude*

2020

Research

Institute for Protein Design, David Baker
Graduate Research Assistant

2021 - 2025

- Developed a diffusion model in protein sequence space using a structure prediction framework.
- Incorporated experimental data to guide the model, demonstrating the power of an informed prior.
- Built a discrete Bayesian optimization workflow to enhance protein fitness via lab-in-a-loop.
- Designed scalable pipelines for creating custom-filtered libraries for high throughput screens.
- Trained autoencoders with novel variable rate compression strategies for protein-ligand complexes.

Regenerative Therapeutics at Binghamton, Tracy Hookway
Undergraduate Research Assistant

2018 - 2021

- Engineered 3D cardiac microtissues to enhance biophysical organization.
- Designed a bioreactor for growth of cardiac mesh tissues.

Publications & Presentations

Computational design of cysteine proteases
Choi, H., Coventry, B., et al., Gershon, J., et al., [biorxiv.org/content/10.1101/2025.11.21.689808](https://www.biorxiv.org/content/10.1101/2025.11.21.689808)

2025

Hierarchical Protein Backbone Generation with Latent and Structure Diffusion
Yim, J., Jaakik, M.*, Liu, G.*, Gershon J.*, et al.*, <https://arxiv.org/abs/2504.09374>

2025

Multistate and functional protein design using RoseTTAFold sequence space diffusion
Lisanza, S., Gershon, J.*, et al.*, [nature.com/articles/s41587-024-02395-w](https://www.nature.com/articles/s41587-024-02395-w)

2024

Towards Guiding Generative Models with Experimental Data
ML Protein Engineering Seminar, youtu.be/hbkDL_vxGKE

2024

Enhancing Formation and Alignment of 3D Cardiac Microtissues
Masters thesis, State University of New York at Binghamton

2021

Construction of 3D Cardiac Microtissues with Extracellular Matrix Additives
Biomedical Engineering Society Annual Meeting, oral presentation

2018

Service, Mentorship & Teaching

GEM Workshop on Generative and Experimental Biomolecular Design
Co-organizer - Workshops at ICLR and NeurIPS, gembio.ai

2024 - Present

Undergraduate Mentorship Program at University of Washington
Mentor - Trained students to process data and train sequence to function prediction models.

2023 - 2025

Introduction to Structural Biology

2022

Teaching Assistant - Led discussion sections and lectured unit on methods development

Software

Python, PyTorch, Hydra, Biotite, NumPy, GitHub, Matplotlib, Seaborn