



Education

University of Illinois at Urbana-Champaign

AUG 2017-MAY 2022

Doctor of Philosophy in **Computer Science: Machine Learning & Comp. Biology&Chemistry**

GPA: 4.00 / 4.00

Awards: **University Fellowship**, **Richard T. Cheng Endowed Fellowship**

Brandeis University

SEP 2013-MAY 2017

Bachelor of Science in **Computer Science** and **Neuroscience**

GPA: **3.96** / 4.00 (Overall) **4.00** / 4.00 (CS)

Awards: **Summa Cum Laude**, **Phi Beta Kappa** (junior inductee), **Schiff Fellowship**, **Collaborative Research Grant**

Experience

Research Assistant | UIUC

AUG 2017-PRESENT

- ▶ I work with my advisor, Prof. Jian Peng, on various problems in computational biology and chemistry with machine learning and data driven approaches. I really enjoy the science aspect our research.
- ▶ My research topics include **protein** sequence/structure modeling and design, **graph based neural network** for molecule property prediction and reaction prediction, de-novo **molecule design**.

Student Researcher | Google

MAY 2018-PRESENT

- ▶ I spend part of my time working with the talented folks from Google Brain and Accelerated Science.
- ▶ In 2018, we leveraged the Generative Adversarial Network (**GAN**), and created a generative model to mediate the **batch effect** in **high content cell imaging**. The model implementations are contributed to the [TensorFlow open source effort](#), and the work is later published in Bioinformatics.
- ▶ In 2019, we proposed a combinatorial formulation for **structural variant calling**, and developed an efficient (x100) algorithm to improve the precision of existing callers. This project is still in the work.
- ▶ Currently, I am working on **drug-target interactions** and transfer learning for **odorant molecule** with a team focusing on digitizing the chemical senses and the underlying technologies/models.

Software Engineering Intern | Uber

SUMMER 2017&2018

- ▶ In 2017, I designed and created a **web application** for internal mobile developer to investigate UI test failures that synchronize the test logs and videos timestamp reduce the debug time by 50%.
- ▶ In 2018, I developed a variant of **conditional random fields** to infer key events during Uber Eats delivery with **mobile sensor**, and identified data quality issue causing performance issue in previous efforts. The effort also won **the first prize** for Uber's first internal machine learning poster session.

Publication

- ▶ **Qian, W.W.**, Xia, C., Venugopalan, S., Narayanaswamy, A., Dimon, M., Ashdown, G., Baum, J. Peng, J., Ando, D.M. (2020). Batch Equalization with a Generative Adversarial Network. **Bioinformatics**.
- ▶ **Qian, W. W.**, Russell, N. T., Simons, C. L., Luo, Y., Burke, M. D., & Peng, J. (2020). Integrating Deep Neural Networks and Symbolic Inference for Organic Reactivity Prediction. **ChemRxiv**.
- ▶ Sanchez-Lengeling, B., Wei, J., Lee, B., Reif, E., Wang, P., **Qian, W.W.**, McCloskey, K., Colwell, L., & Wiltchko, A. (2020). Attribution for Graph Neural Network. **NeurIPS2020**.
- ▶ Luo, Y., Vo, L., Ding, H., Su, Y., Liu, Y., **Qian, W.W.**, Zhao, H., & Peng, J. (2020). Evolutionary context-integrated deep sequence modeling for protein engineering. **RECOMB2020**.

Service

- ▶ **Program Committee** for ICML - ML Interpretability for Scientific Discovery Workshop 2020.
- ▶ **Reviewer** for Intelligent Systems for Molecular Biology (ISMB) 2019&2020.