JUSTIN Z. TAM

(917) 892-9765 • jzt320@lehigh.edu • linkedin.com/in/justin-z-tam •

SUMMARY

I am a Ph.D. student in Computer Science at Lehigh University working in the field of structural bioinformatics, seeking an internship position in Machine Learning research. My work focuses on developing computational methods for protein structure prediction and function annotation. Towards this end, I utilize skills in Machine Learning methods, 3D modelling, full stack web development, and wet lab protein research to fully demonstrate my methods at Lehigh University's Informatics Lab.

EDUCATION

Ph.D. Candidate in Computer Science/Bioinformatics August 2020 - Graduating May 2025
Lehigh University, Bethlehem, PA
P.C. Rossin College of Engineering
Advisor: Brian Y. Chen

B.A. in Mathematics, Minor in Computer Science and Chemistry August 2015 - May 2019
Skidmore College, Saratoga Springs, NY

TECHNICAL SKILLS

Machine Learning: *(proficient)* Tensorflow, PyTorch, Private LLM Development, GPT Prompt Engineering, *(familiar)* Scala
Programming: *(proficient)* Python, C, C++, JavaScript *(familiar)* Java
Full Stack Web Development: NodeJS, ReactJS, HTML, CSS, MongoDB
Other Technical Skills: Git, Matlab, Unix , Docker, Google Cloud, AWS
Other Relevant Skills: Presentation, Project Planning, Independent Research Idea Development, Team Management, Wet Lab Protein Research, Biochemistry

PUBLICATIONS

A Containerization Framework for Bioinformatics Software to Advance Scalability, Portability, and Maintainability.
In 14th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics (BCB '23), September 3–6, 2023

HBcompare: Classifying Ligand Binding Preferences with Hydrogen Bond Topology
Biomolecules, MDPI, Oct 28, 2022

- Assembled a graph neural network pipeline for analyzing hydrogen bond topology in proteins.
- Utilized various machine learning methods like graph neighborhood aggregation strategies, graph kernels, principal component analysis, and convolutional neural networks.

Analysis of Protein-Protein Interactions for Intermolecular Bond Prediction
Molecules, MDPI, Sep 21, 2022

DiffBond: A Method for Predicting Intermolecular Bond Formation
2021 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), IEEE, Dec 9, 2021

EXPERIENCE

New York City College of Technology, Brooklyn, NY: Adjunct Professor in Mathematics August 2019 - June 2020

- Aided in the development of a web-based interactive homework assignment and grading system, used in all math classes throughout the college.
- Taught several college level mathematics courses including pre-calculus, calculus 1, and calculus 2.
- Utilized a mix of lecture-style and activity-style teaching strategies to maximize participation and understanding of difficult topics.

Lehigh University, Bethlehem, PA: Teaching Assistant January 2021 - May 2021

- Assisted in teaching CSE017: Programming and Data Structures to a class of 127 students.
- Organized a large team of teaching assistants and graders to offer project guidance and complete assignment grading.
- Setup a complete Github organization with integration to Github Classroom to streamline code submissions, and wrote a step-by-step tutorial for using Git, Github and Github Classroom.

ACADEMIC SERVICE

Treasurer of the Machine Learning Club August 2022 - Present
Lehigh University

- Presented on machine learning topics like convolutional neural networks, SVM, and PCA, as well as trending topics in machine learning research like graph analysis and graph neural networks.
- Advised members in developing machine learning project ideas.

LANGUAGES

English (Native)
Mandarin (Fluent)
Cantonese (Limited Working)