Jimmy Li

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SUMMARY

Software engineer with a liberal arts mindset. A fast learner who is also passionate about understanding product ecosystems and users' needs to architect scalable, maintainable software that aligns with long-term business goals.

TECHNICAL SKILLS

Programming Languages: Python, C, R, HTML, CSS
Frameworks & Libraries: pygame, pytest, NumPy, YOLOv3, OpenCV, GluonCV
Tools & Platforms: Git, Unix/posix/Linux**,** VMD, NAMD, SLURM
Other: TIP4P/2005, Microsoft Excel, Microsoft Word

EDUCATION

University of Chicago **Chicago, IL**
***Major**: Computer Science* *Expected Jun. 2027*

Texas A&M University System **Commerce, TX**
Mechatronics, PSA (Guaranteed transfer to the College Station) *Aug. 2023 – May. 2024*

- **Cumulative GPA**: 4.000/4.000
- **Honors**: Dean's list, Presidential Scholarship recipient

TECHNICAL PROJECTS

Python Implementation of a Card Game (Group project) (GUI/Game Logic) *Jan. 2025 - Mar. 2025*

- In a team of four students, developed a playable card game, including the game logic, a GUI, a terminal-based interface, a simple gameplaying strategy, and tests. Code is available upon request.

Molecular Dynamics Simulations on the Ice-Crystal Inhibition of the Type III Antifreeze Protein (1UCS) Jan. 2025 - *Mar. 2025*

- Designed and executed molecular dynamics simulations to study how the 1UCS antifreeze protein inhibits ice-crystal growth in polar fish. Compared protein-containing vs. bulk-water systems under controlled freeze–thaw conditions.
- Analyzed hydrogen-bond formation, water mobility, and protein conformational stability using a TIP4P/2005 water model and NAMD 2.11 on a high-performance computing cluster.
- Discovered a critical bug in NAMD 2.14 that prevented its use with the TIP4P/2005 model, leading to a switch to NAMD 2.11 on the Midway2 supercomputer for reliable simulation results.

Variant Analysis Pipeline for Exome Sequencing Data *Oct. 2024 - Dec. 2024*

- Designed and implemented a comprehensive NGS bioinformatics pipeline to process exome sequencing data, from raw read alignment to variant annotation and interpretation.
- Analyzed 153,371 variants—including 64,947 high-confidence variants and 12,456 exonic changes—highlighting medically relevant mutations linked to conditions like Sandhoff disease, heterotaxy syndrome, and primary hyperoxaluria type II.

EXPERIENCE

Texas A&M University System **Commerce, TX**
Learning Assistant, Calculus 1 *Jan. 2024 - May. 2024*

- Assisted students during lecture and lab by providing guidance on problem-solving and reinforcing key concepts.
- Hosted weekly review sessions and lectures to support student comprehension and exam preparation.
- Committed 10 paid hours weekly to student support and regularly volunteered additional hours to assist students outside of class and review session hours.

Research Assistant *Sept. 2023 - May. 2024*

- Conducted research under the mentorship of Dr. Abdullah Arslan, CS Department Head, focusing on AI-based object detection and classification techniques.
- Explored machine learning approaches for recognizing rigid objects in digital imagery, with emphasis on deep neural networks and computer vision pipelines.
- Implemented and tested models using YOLOv3 and Faster R-CNN architectures with MXNet**,** PyTorch, and OpenCV.

OTHER

Languages: Native Proficiency: English, Mandarin & Sichuanese
Interests: Concert Piano (12+ years), Jazz Big Band, Marching Band, League of Legends (Champion in Michigan), Golf