

Jimmy Li

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EDUCATION

University of Chicago

Major: Computer Science

Texas A&M University

PSA (Guaranteed transfer to the main campus)

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

Chicago, IL

Sept. 2024 – expected to graduate in 2027

Commerce, TX

Aug. 2023 - May. 2024

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.

EXTRACURRICULAR ACTIVITIES

Learning Assistant, Texas A&M-Commerce

Commerce, TX

Calculus 1 LA

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 Experience, Texas A&M-Commerce

Commerce, TX

Researcher

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

Band, Heritage High School

Saginaw, MI

Pianist, Guitarist, Arranger, Snare Drum, Bass Drum, Percussionist

Oct. 2021 – May. 2023

- Rehearsed every Tuesday and Thursday after school for Jazz and performed for the community with an audience of around 50 people.
- Helped the instructor modify and arrange musical pieces for different instrument parts.
- Served as the section leader of the percussion section for the school wind ensemble and marching band.

VOLUNTEER EXPERIENCE

Saginaw County Republican Party

Saginaw, MI

Salesperson, Technician

Aug. 2024 – Sept. 2024

- Assisted with merchandise sales and inventory organization at events, and set up basic office equipment (e.g., printers) to keep daily operations running smoothly.

Music Services

Saginaw MI

Music tutor, Accompanist, Performer

Oct. 2022 – Mar. 2023

- Provided music performances for the community during holidays.
- Provided free music tutoring, accompaniment, and coached high school solo-ensemble participants.

OTHERS

Languages: Fluent in Mandarin & Sichuanese

Skills: Proficient in Python, C, R, pygame, pytest, NumPy, git, Unix/posix command-line, VMD, NAMD, TIP4P/2005, SLURM (Midway2/3), NGS, BWA, SAMtools, BCFtools, ANNOVAR,