**Jimmy Li**

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**EDUCATION**

**University of Chicago Chicago, IL**

***Major****: Computer Science Sept. 2024 – expected to graduate in 2027*

**Texas A&M University Commerce, TX**

*PSA (Guaranteed transfer to the main campus) 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.

**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,