# TINGYU SHI

✉ t5shi@ucsd.edu   ⌗ tingyushi

## EDUCATION

**McMaster University, *Hamilton, Canada***                                    **09.2019 − 05.2023**
*Bachelor of Engineering in Software Engineering*                                    *GPA: 3.96/4*

Awards: Deans' Honour List in 2020 Winter, 2021 Winter, 2022 Winter, and 2023 Winter

**Coursework: Intro to Machine Learning(A), Scientific Computation(A+), Statistics(A+), Linear Optimization(A), Discrete Mathematics(A+), Data Structure & Algorithms(A-), Engineering Mathematics(Calculus and Linear Algebra)(A+), Intro to Software Development(A+), Software Architecture(A+), Concurrent System Design(A+), Real Time Systems(A+), Operating System(A+)**

**University of California San Diego, *San Diego, United States***        **09.2023 − Excepted 06.2025**
*Master of Science in Computer Science*

## INTERNSHIP EXPERIENCE

**McMaster University**                                                           **01.2023 − 05.2023**
*Teaching Assistant of Course: Comp Sci Practice and Experience: Algorithms & Software Design*        *Hamilton, Canada*
- Monitored labs and guided students with coding exercises, including coding different data structures and algorithms
- Marked code assignments and assisted the professor in marking midterms and final exams

**McMaster University**                                    **01.2022 − 05.2022 / 09.2022 − 12.2022**
*Teaching Assistant of Course: Intro of Software Development*                                    *Hamilton, Canada*
- Marked code assignments of students, answered assignment questions, completed assignments solutions, wrote unit testing files, and assisted the professor in marking midterms and final exams

## RESEARCH EXPERIENCE

**UCSD with Dr. Pengtao Xie**                                                           **09.2023 − Present**
- Collected CT Datasets and processed CT images
- Trained a foundation model for CT images using Masked Autoencoders
- We may finetune the model for specific tasks in the future

## ACADEMIC PROJECTS

**Digital Twin Forest**                                                           **09.2022 − 04.2023**
*Supervisor: Professor Alemu Gonsamo*
- Conducted literature review about digital twin technologies
- Used parametric modelling to create a virtual representation of the real forest(located at Turkey Point, Ontario, Canada) according to the data collected by the remote sensing lab
- Completed forest data visualization and synchronization between forest data and forest model
- Optimized Unity Terrain Tool for dynamic tree planting

**Software Management Project**                                                           **01.2022 − 05.2022**
*Team Leader*
- Took responsible for team meeting organization and tasks assignment for team members
- Cooperated with team members to complete multiple project documents including problem statement, development plan, software requirements specification, module guide, module interface specification, testing plan, and testing report
- Took charge of game models implementation for game Space Invaders and corresponding testing files, and the implementation of game controllers that interact with users' inputs and game models

**Software Architecture Project**                                                           **01.2022 − 05.2022**
*Team Member*
- Participated in the project to design and implement the system modeling electronic pet
- Cooperated with team members to finish system documents including system requirements, software architecture design, specific models and classes design
- Implemented the electronic pet simulator using Unity

**Social Network Study**                                                           **02.2022 − 04.2022**
*Supervisor: Professor Munther Dahleh*
- Learnt multiple network attributes and different random network models such as Erdős–Rényi model, Configuration model, Preferential Attachment model, etc.
- Looked into different node centrality measurement methods, and analyzed social network data from Twitter, Instagram and Facebook using different centrality measurements
- Prepared and gave presentation of the methodology and results of analysis

## CERTIFICATIONS

**Certificate 1**: Coursera Machine Learning Specialization
**Certificate 2**: Coursera First Principles of Computer Vision Specialization
**Certificate 3**: Coursera Convolutional Neural Network Course

## TECHNICAL SKILLS

**Programming Languages**: Python, Java, C, C#, R, SQL, Matlab, Verilog, Assembly
**Software & Tools**: Git, Tensorflow, PyTorch, Kubernetes, Keras, Unity, Doxygen, Latex, Makefile