# Mu-Ruei Tseng

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## Summary

An accomplished Master of Computer Science student at Texas A&M University, proficient in diverse software development domains, including Machine Learning, Computer Vision research, full-stack .NET and Vue.js development, and robotic programming.

## Education

**Texas A&M University** **College Station, Texas**
Master of Computer Science Aug. 2023 - Exp. Jun. 2025

**Hong Kong University of Science and Technology** **Hong Kong**
Bachelor of Science in Computer Science and Mathematics Sep. 2017 - Aug. 2021
Minor in Robotics. Graduated with First Class Honors and GPA 3.66/4.3.

## Professional Experience

**Neurobit Technologies** **Taipei City, Taiwan**
*Computer Vision Software Engineer* Jun. 2022 - Jul. 2023
- Conduct comprehensive eye gaze model research to identify potential Nystagmus symptoms.
- Develop a application dedicated to oculomotor tests, built using WPF with MVVM structure.
- Design a labelling tool using ASP.NET Core Blazor for efficient data organization and curation.

**CSE department, Hong Kong University of Science and Technology** **Hong Kong**
*Research Assistant,* advised by Prof. Chi-Keung Tang Jul. 2021 - Dec. 2021
- Research Human Action Recognition models for accurate performance with limited training data, and develop a novel 3D+T Human Action Dataset for advanced human pose estimation (HAA4D).

**Alliance Technology Global Limited** **Hong Kong**
*Frontend Developer Intern* Nov. 2021- Dec. 2021
- Create an admin portal for Aero Link utilizing Vue.js, and design modular components for reusability across multiple projects.

**Lilee Systems** **New Taipei City, Taiwan**
*Software Engineer Intern* Dec. 2019 - Jan. 2020
- Real-time monitoring of bus drivers' behavior via feature extraction using state-of-the-art algorithms.
- Developed GUI using Tkinter for dataset management and accelerated labeling processes.

## Projects

**HAA4D: Few-Shot Human Atomic Action Recognition via 3D Spatio-Temporal Skeletal Alignment**
- Proposed a skeleton-based action recognition model that make use of few-shot learning and the explicit geometric property of human skeleton in the globally aligned space.

**GuitarTabPro**
- Extract tabs in YouTube guitar tutorial videos and combine them into a complete sheet.

**STM32 Live Stream Car**
- Built a three-wheels remote control car using STM32 cpu that can return live streams of the current room with a frame rate of 1~2 FPS.

**Real-Time Object Detection with Depth Estimation on Mobile Devices**
- Designed a real-time, mobile-optimized multitasking model. Deployed on an iPhone 8 with 17.7 MB size and achieving a frame rate of 6.41 FPS.

**Augmented Reality Technology for Visually Impaired**
- Incorporated Explainable AI into conventional image classification tasks to enhance the persuasiveness of model predictions for visually-impaired individuals.

**AI meets Big Data**
- Utilized Raspberry Pi to collect raw indoor Wi-Fi and magnetic signals and employed unsupervised learning techniques to analyze the data and achieve accurate indoor positioning.

## Achievements

- Entered the National Round of the 14th NXP Cup Intelligent Car Racing Competition ("Creative" category, China) Aug. 2019
- The Third Price of the 13th NXP Cup Intelligent Car Racing Competition ("Dual Car" category, South China Region) Jul. 2018

## Technical Skills

- Python (Pytorch, Tensorflow, OpenCV, Tkinter, Flask), C# (Emgu CV, Emgu TF), C++, HTML, JavaScript/TypeScript, CSS, SQL, Swift, Java
- .Net, Vue.js, React, Git, LaTeX, Unity