

# Jen-Hung (Tom) Chang

@personal website | @gmail | @linkedin | @github

## TECHNICAL SKILLS

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**Programming Languages** : C/C++, Java, Python, JavaScript, Bash, Shell Scripts, R, MySQL, JSON, HTML, CSS, Verilog, Assembly(ARM, x86)

**Libraries and Environment** : Pytorch, Tensorflow, OpenCV, OpenGL, WebGL, Node.js, React

**DevOps and API Tools** : Git, Docker, REST

**Others** : AWS (Lightsail, Route 53, Cloudfront), GNU debugger (GDB)

## EDUCATION

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**Duke University** | Durham, NC

Sept. 2024 – Present

Master of Engineering candidate in Electrical and Computer Engineering

**Chung-Yuan Christian University** | Taoyuan, Taiwan

Sept. 2018 – June 2022

Bachelor of Science in Information and Computer Engineering

- Overall GPA: 3.9/4.0, ranking 10/119
- Awards: Certificate of Holistic Honorary Award (only 50 people in one year)
- Relevant Coursework: Data Structures and Algorithms, Object Oriented Programming, Analysis of Algorithm, Programming Language, Operating System, Linux Operating System Practices, Intro. to Data Mining, Network Security, Computer Graphics

## PROFESSIONAL EXPERIENCE

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**Software Engineer** | RealPlus Technology, Taoyuan, Taiwan

June 2022 – Present

- Designed a data pipeline among devices **under ROS** (Robot Operating System) on Jetson Nano
- Enhanced flexibility for secondary development by designing APIs to support variable modes in self-driving car project
- **Increased** lane tracking **accuracy by 20%** through integration of Gaussian blur and lane prediction algorithm

**Student Researcher** | Pattern Recognition Lab

June 2020 – Dec. 2021

- Participated in Using Action Recognition to Crack reCAPTCHA plan, ranked **third place** out of our department
- Built the training environment in **Docker**, **improving** training efficiency by **40%**
- Qualified with the application for Undergraduate Research Fellowship authorized by Taiwanese government

**Full-Stack Software Engineer Intern** | Taiwan Sustainable Campus Project

June 2019 – June 2020

- Participated in Taiwanese government project focused on achieving Sustainable Development Goals
- Revamped database to enhance the accuracy of hitting information by **20%** and security of website's authority using **SQL**
- Developed and implemented new pop-out announcement feature on website using **JavaScript** and **HTML**, enhancing user communication capabilities

## SELECTIVE PROJECTS

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**Using Action Recognition to Crack reCAPTCHA** | Python, Computer Vision, Machine Learning Sept. 2020 – Dec. 2021

- Designed defense strategy to distinguish between machines and humans when using reCAPTCHA with action
- Generated and classified cropped pictures by designing Machine Learning models using **Transform Learning & Grad-CAM**
- Achieved **accuracies of 98%, 60%, and 65%** for 3 classifications under our best defense approach

**OurScheme Interpreter** | C/C++, Programming Language

Feb. 2021 – June 2021

- Implemented parser and scanner by tree-based structure and **20 Scheme instructions** using C++
- Handled syntax error and run-time error (no return value and unbound) from **thousands of inputs**

**FRANCIS Compiler** | C/C++, **Compiler**

Sept. 2020 – Jan. 2021

- Designed a compiler for FRANCIS, a high-level language similar to FORTRAN
- Implemented a Lexical Analysis and Syntax Analysis
- Generated Intermediate Code by generating 7 tables to address and record identifiers and arrays