Yujen (Jay) Lin

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ABOUT

Jay is an engineering student at the University of Toronto with hands-on experience in software and hardware development. He has contributed to projects ranging from radar design for MRI applications to real-time transcription software using machine learning. Skilled in programming, electronics, and design, Jay also maintains a creative portfolio showcasing his artistic talents. Fluent in English and Mandarin, he combines technical expertise with creativity to innovate and solve complex problems.

EDUCATION

UNIVERSITY OF TORONTO

- **Bachelor of Applied Science**
- **TrackOne (Undeclared) Engineering + PEY Co-op**
- **Sep 2024 ~ June 2029**

NORTH TORONTO COLLEGIATE INSTITUTE

- **Ontario Secondary School Diploma**
- **Sep 2020 ~ June 2024**

EXPERIENCE

ELECTRICAL ENGINEER SUMMER INTERN

TIMWAVES LTD. // Taipei, Taiwan // Jul ~ Aug 2024

- Studied the theory of radars and designed an analog radar module through computer-aided design software and trial and error with electrical measuring instruments.
- The module outputs continuous analog signal from the radar, the data is then used to obtain object distance, speed, and angle of arrival.
- The module is planned to be used in research related to magnetic resonance imaging (MRI) to calibrate the tiny error from the patient's movement.

SOFTWARE ENGINEER SUMMER INTERN

Skywatch Inc. // Taipei, Taiwan // Jul ~ Aug 2023

- Developed a screen-display camera configuration menu program under a team environment.
- The menu is developed through C and the Light and Versatile Embedded Graphics Library (LVGL).
- The program is compiled for public view monitors, which is used in one

of the product prototypes.

SOFTWARE DEVELOPER

National Yang Ming Chiao Tung University // Taipei, Taiwan // Sep 2022 ~ Jun 2023

Compiled a real-time software for Mandarin speech transcription application with millisecond-accurate word onset timing.

- The software was developed through TypeScript and the speech-recognition model Vosk.
- Word timing was used to calculate the information rate, which was correlated with the human brain imaging data to reveal language brain areas and networks.
- The application automated the manual labelling process that researchers had to do to improve the research productivity.

MENTEE

Math Mentorship Program // Department of Mathematics, University of Toronto // Jan 2022 ~ May 2022

- Theoretical and hands-on study of how batch normalization improves the performance of an artificial neural network and accelerates the convergence of training.
- Learned advanced mathematics such as linear algebra, logistic regression, and multivariable calculus for machine learning applications.
- Created neural networks with and without batch normalization through PyTorch, NumPy, and machine learning mathematics to demonstrate one hypothesis from (Santurkar et al., NIPS 2018).

PROJECTS

REAL-TIME TRANSLATOR

Programming // Sep 2024 ~

- Developed a real-time transcription application that transcribes and translates system audio. The program is developed through OpenAI’s transcription machine learning model Whisper along with other data analysis framework such as NumPy and MATLAB.
- Although still under development, the project's future involves breaking through the language barrier of digital media by enabling a smart, live transcription system.

PIXIV PORTFOLIO

Illustration// Sep 2024 ~

- Growing a community under the platform Pixiv by uploading various illustrations
- Over 1000+ view on the platform with constructive feedback given by members of the community

SKILLS

PROGRAMMING LANGUAGE AND TOOLING

- **System Development:** Rust, C
- **Machine Learning:** Python, PyTorch

- **Data Science:** Python, MATLAB, NumPy
- **Multithreading:** Java, Kotlin
- **Version Control:** Git, GitHub, GitLab
- **Web UI-Logic Framework:** React, Svelte
- **Full-Stack Framework:** Next.js
- **Web Styling Framework:** Tailwind CSS, Framer Motion
- **General Scripting:** JavaScript, Shell Script, Bash

HARDWARE DEVELOPMENT

- **Microcontrollers:** Arduino, ESP32
- **Electronics Design:** KiCad, Fritzing
- **3D Printing:** FreeCad, Blender, Dremel Tools
- **Software Integration:** C
- **Electronics Assembly:** Soldering, Wiring
- **Electrical Measuring Instruments:** Multimeters, Oscilloscope, Spectrum Analyzer

CREATIVE AND MULTIMEDIA SOFTWARE

- **Graphic Design:** Photoshop, Illustrator, Canva
- **Pixel Art:** Photoshop, paint.net
- **Video Editing:** Premiere Pro, Power Director, After Effects
- **Illustration:** Clip Studio Paint, Procreate

OFFICE AND PRODUCTIVITY

- **Office Software:** Microsoft Office, Google Suit
- **Collaboration Tools:** Microsoft Teams, Slack
- **Project Management:** Notion

CERTIFICATES Japanese Language Proficient Test (JLPT) - N5

LANGUAGES English (Fluent) // Mandarin (Fluent) // Japanese (Basic)

REFERENCE

DR. WEN-JUI KUO

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