Jiawei (Jacky) Ye

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Education

University of Toronto — Toronto, ON
Bachelor of Applied Science and Engineering in Computer Engineering + PEY Co-op — *Sep 2023 – Apr 2027*

- Recipient of Dean's Honor List (Spring 2024, Spring 2025)

Work Experience

Tencent Cloud — Shanghai, China
AI Engineering Intern — *Jun – Aug 2025*

- Developed a **news pipeline** that processes 3,000+ news clips each week for a provincial TV channel on **Tencent COS** server with AI-driven content categorization, using **Flask, Dify, and Python.**
- Designed AI-powered news search and report generation bot with **Dify and Python**, integrated for WeCom as groupchat bot
- Developed a secure translation API using **Dify**, with average delay around **200ms** and correction for streaming output.
- Built a user behavior simulation framework with persona generation. It features a rule-based engine and JSON analytics.

Tencent Cloud — Shanghai, China
AI Product Intern — *May – Aug 2024*

- Collaborated with **Shanghai Education Television** to build kindergarten datasets using **Selenium and PyTorch**.
- Deployed web scraping programs in **Docker containers** for scheduled data collection each day from WeChat public accounts.
- Contributed to an **AI-driven news sorting system** for Zhejiang Television, improving content categorization.
- **Rehired** for 2025 internship based on exceptional technical performance and impact.

BesTV — Shanghai, China
AI Tech Intern — *May 2025 – Jun 2025*

- Deployed and managed **Docker-based** AI infrastructure with custom **MCP servers**, enabling scalable LLM workflows.
- Implemented AI workflows for **PPT summarization/image generation** with **DeepSeek, Alibaba Tongyi** APIs.
- Built custom **Model Context Protocol (MCP)** servers for structured data output and API orchestration on **Ubuntu**.
- Optimized local speech systems using **OpenAI Whisper** (speech-to-text) and **CosyVoice** (text-to-speech).

Project Experience

RF Frequency Downconversion System — Toronto, ON
ECE295 Subsystem A Project, University of Toronto — *Feb 2025 – Apr 2025*

- Designed and implemented Subsystem A **PCB** using **Altium Designer** with bandpass filter, mixers, and amplifiers.
- Designed and tested a **Gilbert-cell mixer** using BJTs, downconverting signals from **8-16 MHz to 100 kHz**.
- Performed **PCB debugging** and signal verification with oscilloscope, including bias tuning and fault isolation.
- Contributed to one of only **4 out of 20 teams** that achieved full system integration and successful downconversion.

FPGA Donkey Kong Implementation — Toronto, ON
University of Toronto — *Nov 2024 – Dec 2024*

- Recreated Donkey Kong on FPGA using **Verilog**, implementing game logic, **sprite rendering**, and **collision detection**.
- Engineered digital circuits for **character control** and **level transitions**, verified with **ModelSim** and synthesized in **Quartus**.
- Achieved **real-time gameplay** on **DE1-SoC board** through timing analysis and **FPGA resource optimization**.
- Produced technical documentation and presentations outlining **system architecture** and key design challenges.

FPGA Laser Game — Toronto, ON
ECE243 Final Project, University of Toronto — *Jan 2025 – Apr 2025*

- Developed a laser reflection puzzle game in **C** for **DE1-SoC FPGA** with **VGA** output and **PS/2 keyboard** input.
- Implemented **double buffering** to achieve smooth **60 FPS** screen updates without visual artifacts or flickering.
- Engineered game logic including **laser trajectory calculation**, **mirror reflection physics**, and game state management.
- Designed custom graphics and UI elements with life counters and timers through low-level **I/O** operations.

Skills

Programming: **Python**, **C/C++**, **Verilog**, C#
AI/ML & Data: PyTorch, TensorFlow, Pandas, NumPy, **Dify**, **LangChain**, RAG systems
Backend & DevOps: Flask, FastAPI, Docker, **Selenium**, Anaconda, PlatformIO, Git/GitHub, SQL
Circuit & EDA Tools: Altium Designer, LTSpice, ModelSim, LCEDA, Oscilloscope & Logic Analyzer operation
Embedded Systems: DE1-SoC FPGA, ModelSim, Quartus Prime
3D Design & Fabrication: Blender, AutoCAD, Ultimaker Cura, Bambu Studio, 3D Printing (FDM, PETG/PLA/ABS)