Yilin Li

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Education Background

- **University of Michigan, Ann Arbor** — MI, USA
  Master of Science in Electrical and Computer Engineering (Minor: Computer Vision) — *Sep 2021 - Apr 2023*
  GPA: 4.00/4.00
  Courses: Data Manipulation and Analysis, Machine Learning, Computer Vision, Database App Design, Intermediate Programming

- **Zhejiang University** — Hangzhou, China
  Bachelor of Engineering in Electronic Information (Minor: Information Engineering) — *Sep 2017 - June 2021*
  GPA: 3.68/4.00 (**Major:** 3.82/4.00)
  Courses: Numerical Analysis Methods, Digital Image Processing, Data Analysis and Algorithm Design, Computer Composition and Design

Skills Summary

- **Programming languages**: C/C++, Python, Java, JavaScript, HTML, CSS, Shell, SQL, Julia, Verilog
- **Tools & Frameworks**: Git, AWS, Linux, Docker, MongoDB, PyTorch, TensorFlow, Django, React, Flask, Pandas

Related Experience

- **Huawei Hangzhou Research Institute** — Hangzhou, China
  Software Development Engineer Intern — *July 2020 - Aug 2020*
  - **Code Optimization**: Reduced the cyclomatic complexity of more than 25 functions.
  - **Compiler Bug Fix**: Updated dependent library versions and fixed conflicts, successfully located and solved the failure of several example test cases using the GDB debugger.
  - **New Feature Development**: Learned LLVM basics and developed a new pass to estimate compilation time.

- **Tokyo Institute of Technology** — Tokyo, Japan
  Summer School — *July 2019*
  - **Assemble Program and Analysis**: Implemented and optimized various functions of a basic calculator.
  - **FPGA-implemented Applications**: Implemented a multi-machine interactive chat program and a chess game program.

Research and Projects

- **Exploration and Agent Improvement under Near-Real Market Environments Simulation Using DRL**:
  Simulated the market trading environments in the real world. Applied several popular deep reinforcement learning algorithms to trade multiple stocks. Proposed an improved model using ensemble method. Evaluated the profitability of agents with different algorithms in extreme trading environments
  Tech: Python, Deep Reinforcement Learning, Data Analysis (Oct 2022 - Dec 2022)

- **Multiplayer Gobang Based on Reinforcement Learning**:
  Proposed a multiplayer Gobang agent based on modified Alpha MCTS consists of transformer blocks implemented with attention mechanism. Achieved higher win rate than human players and agent based on pure MCTS.
  Source code: github.com/Flanker-E/Alpha_Attention_Multiplayer_Gobang
  Tech: Python, Reinforcement Learning, Transformer (Jan 2022 - Apr 2022)

- **Image inpainting using GAN, partial convolution and region normalization**:
  Proposed a model based on a conditional GAN, replaced all convolutional layers with partial convolutional layers, implemented Region Normalization in the Generator, and achieved better qualitative and quantitative results.
  Tech: Python, Computer Vision, GAN (Oct 2021 - Dec 2021)

- **Makeup migration technology based on deep learning**:
  Realized facial makeup transfer effect using traditional digital image processing method including dividing layers and weighting blending. Realized facial makeup transfer effect using modified cycle GAN and achieved much better results than traditional methods.
  Tech: Python, PyTorch, Computer Vision, GAN (May 2019 - June 2020)

Honors and Awards

- Outstanding Graduate of Zhejiang University - 2021
- Meritorious Winner in Mathematical Contest in Modeling - 2020
- University Student Scholarship of Texas Instruments - 2019
- Outstanding Volunteer of Zhejiang University - 2019

Other Experience

- **Volunteer teacher in elementary school** — Jinhua, China
  Taught more than 30 students science and managed the daily affairs of the class — *Summer 2018*