

Yang Adrian Liu

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No.220 Handan Road, Shanghai, China

EDUCATION

Fudan University

Shanghai, China

Master of Engineering in Electronics Science and Technology

Sep. 2022 – Present

- **GPA: 3.85/4.00** **Rank: 1st** (out of 45)
- **Research Field:** Integrated Circuit and System Design, Design Automation
- **Major Courses:** Advanced Digital Integrated Circuits Design, System-Level FPGA Design, Digital Signal Processing VLSI Design, Discrete Mathematics & Optimal Decision, Parallel Computing

Fudan University

Shanghai, China

Bachelor of Engineering in Microelectronic Science and Engineering

Sep. 2018 – June 2022

- **GPA: 3.80/4.00** **Rank: 3rd** (out of 147)
- **Research Field:** Hardware Accelerator, Artificial Intelligence Application
- **Thesis:** A Hardware Acceleration Strategy of Squeeze-and-excite Network Based on the FPAI Chip and Compiler

RESEARCH EXPERIENCE

Research Assistant, State Key Laboratory of ASIC and System

Fudan University, Shanghai, China

Feb. 2022 – Present

Advisor: Prof. Jun Yu, Prof. Kun Wang

Research Intern, Intelligence Computing Lab

Shanghai Fudan Microelectronics Group Co., Ltd, Shanghai, China

July 2021 – Feb. 2023

Advisor: Prof. Jun Yu, Jicheng Lu

Research Assistant, Video and Image Processing Lab

Fudan University, Shanghai, China

Aug. 2020 – May 2021

Advisor: Prof. Yibo Fan

PUBLICATION

- [1] **CSTrans-OPU: An FPGA-based Overlay Processor with Full Compilation for Transformer Networks via Sparsity Exploration** (*pending for camera-ready*)
Yueyin Bai, Keqing Zhao, **Yang Liu**, Hongji Wang, Hao Zhou, Xiaoxing Wu, Jun Yu, Kun Wang
61st ACM/IEEE Design Automation Conference (DAC), 2024
- [2] **DIF-LUT: A Simple Yet Scalable Approximation for Non-linear Activation Function on FPGA**
Yang Liu, Xiaoming He, Jun Yu, Kun Wang
33rd International Conference on Field Programmable Logic and Applications (FPL), 2023

PROJECTS

AutoTrans | Python, Verilog HDL, C++, Shell; PyTorch, ONNX, Docker, Vivado

June 2023 – Present

- Proposed an automated and extensible framework for the accelerator generation of transformer networks
- Proposed an innovative graph analysis and matching algorithms, ideal for large-scale networks
- Designed a configurable template library of various operations to explore the design space

DIF-LUT | Python, Verilog HDL, Shell; Vivado

Feb. 2023 – Present

- Proposes a simple yet scalable and effective approximation for Non-linear function
- Designed an automation toolchain for table generation and precision evaluation
- Integrated as an computing unit in FPGA-based accelerator for DNN and Nerf

SEResnet Accelerator on SOC | Verilog HDL, C++, Python, Shell; Vivado, VStudio

Feb. 2022 – Dec. 2022

- Organized the acceleration flow of hardware and software co-design with the compiler
- Deployed specific operations on programmable logic resource of SOC
- Programmed and registered C++ operations on host CPU for simulation

COMPETITIONS

2021AIWIN Fall – ECG Diagnosis Track

Oct. 2021 – Feb. 2022

- **Outcomes: Fifth Place**, Participation Mode: Team
- Proposed post-process algorithms for feature correlation analysis
- Implemented mathematical feature extraction as a prior
- Employed existing Python libraries to make further adjustments to the network's prediction

2021 Shanghai Urban Digital Transformation Intelligent Algorithm Competition *Aug. 2021 – Nov. 2021*

- **Outcomes: Grand Prize**, Participation Mode: Team (leader)
- Designed a multi-DNN application scheme for posture recognition in urban scenarios
- Proposed and integrated filter algorithms in the object detection phase
- Collected and transformed appropriate dataset for the urban scenarios

Autonomous Obstacle-Avoidance Mini-Car Competition

July 2021

- **Outcomes: Second Place**, Participation Mode: Team (leader)
- Completed the control design and physical assembly based on embedded systems
- Programmed control behaviors using assembly language on the 51 microcontroller platform
- Soldered peripheral electrical components to the PCB board

AWARDS AND HONORS

- **Fudan University Graduate Student Excellence Scholarship First Prize** *Dec. 2023*
- **Shanghai Outstanding Graduates (Undergraduate)** *June 2022*
- **Fudan University Undergraduate Student Excellence Scholarship First Prize** *May 2022*
- **Fudan University Outstanding Student** *Oct. 2021*
- **Shanghai Municipal Scholarship** *Dec. 2020*
- **Fudan University Outstanding Internet Culture Work: Second Prize** *Dec. 2019*

Co-founded a student mental health social media page, achieving 2k+ followers and nearly 30k views in one semester

ACADEMIC AND EDUCATIONAL ENGAGEMENT

33rd International Conference on Field Programmable Logic and Applications (FPL)

Chalmers University of Technology, Gothenburg, Sweden

Sep. 2023

Poster DIF-LUT: A Simple Yet Scalable Approximation for Non-linear Activation Function on FPGA

Teaching Assistant: Methodology of Integrated Circuit Design

Fudan University, Shanghai, China

Spring 2023

Teaching Assistant: Psychological Training of Success Qualities

Fudan University, Shanghai, China

Fall 2019

OTHER WORK EXPERIENCE

Administrative Assistant, Mental Health Center of Fudan University

Fudan University, Shanghai, China

Feb. 2024 – Present

Middle Manager, Work-Study Program Entity of Fudan University

Student Book Kiosk, Fudan University, Shanghai, China

Jan. 2020 – Jan. 2021

TECHNICAL SKILLS

Languages: Verilog HDL, Python, C/C++, Shell, Assembly, Tcl, etc.

Developer Tools: Vivado, Quartus, Git, Docker, Visual Studio, PyCharm, VMWare Workstation, L^AT_EX, etc.

Frameworks & Libraries: PyTorch, OpenCV, NetworkX, Matplotlib, etc.