Lei Wang

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Education

Texas A&M University
College Station, United States

PhD in Computer Engineering — *Aug. 2019 - Present*

- Advisor: Dr Paul Gratz
- Research area: computer architecture; optimization for multi-threaded workload, in particular computer games.

Imperial College London
London, United Kingdom

Bachelor of Engineering in Electrical and Electronic Engineering, Second-class honours, upper division — *Oct. 2016 - Jun. 2019*

- BEng Final Year Project: a high level schematic editor for simplified Hardware Description Language (HDL) Entry

Skills

Programming C, C++, Verilog HDL, Arm Assembly, Matlab, Python, HTML, CSS, JavaScript, SQL, F#, Promela
Frameworks Flask, Electron, Fable, Node.js
Languages Chinese(Native), English(TOEFL 106, IELTS 7.0), Japanese(JLPT N3)
Software Intel Pin, Spin (Formal Verification), LaTeX, STM32CubeMX, Keil, Visual Studio, git, Microsoft Office, Autodesk AutoCAD.

Experience

SoC Architect Intern
Palo Alto, United States

ZEKU Inc. — *May. 2022 - Nov. 2022*

- Work with ZEKU SoC architect team to deliver a full system model using gem5 simulator.
- Optimize power and performance for multithreaded mobile workload..

Graduate Teaching Assistant
College Station, United States

Texas A&M University — *Aug. 2021 - May. 2022*

- Lab instructor for ECEN 449 Microprocessor System Design (2022 Spring).
- Lab instructor for ECEN 350 Computer Organization and Design (2021 Fall).

Grader
College Station, United States

Texas A&M University — *Aug. 2020 - Dec. 2020*

- Grader for ECEN 350 Computer Organization and Design (2020 Fall).

TAMU Robomaster Robotics Advisor
College Station, United States

Texas A&M University Robomaster Society — *Aug. 2020 - Jun. 2021*

- Work with embedded and computer vision teams for serial port communication and code integration.
- Develop code in C/C++ for ARM-based processor with STM32CubeMX and Keil for robot movement control and wireless signal communication.
- Teach and advise society members for embedded code development and integration.

Student System Administrator
London, United Kingdom

Imperial College Union — *Nov. 2018 - Mar. 2019*

- Work with the Imperial College Union Administration Team.
- Configure and maintain WordPress websites for student clubs and societies at Imperial College London.
- Respond to requests and inquiries from student society and club website administrators.

Software Engineering Intern
Tel Aviv, Israel

Fleetonomy — *Jul. 2018 - Sep. 2018*

- Work on full stack development for a fleet management application similar to Uber.
- Develop unit tests for Python flask backend.
- Develop webpages for visualizing vehicle positions and movements for testing.
- Work on integrating third-party services such as Datadog for system performance monitoring.

Projects

Formal Verification for a Traffic System

College Station, United States

Coursework

Oct. 2021 - Dec. 2021

- Design and verify a traffic system with formal techniques.
- Traffic system implemented in Python flask with a web-page-based GUI.
- Verification done by re-coding the application in Promela and run using Spin, a verification tool for multi-threaded applications.

Book-Keeper

College Station, United States

Team Project

May. 2020 - Aug. 2020

- Develop software for handling reimburse requests within the Texas A&M University Robomaster Society.
- Technology stack: React , Nginx, Gunicorn, Python Flask, deployed using Docker.

Final Year Project

London, United Kingdom

Individual Project

Apr. 2019 - Jun. 2019

- Graphical hardware description language (HDL) editor that outputs Verilog HDL code.
- Implemented in F# and integrated with the Fable compiler to transpile F# to JavaScript.
- Transpiled JavaScript code run under the Electron framework that supports Linux, MacOS and Windows.

Using FPGA Hardware for Algorithm Acceleration

London, United Kingdom

Team Project

Jan. 2019 - Mar. 2019

- Configure a FPGA device to run the NIOS II processor.
- Algorithm written in C and uploaded to the FPGA device and executed in the NOIS II processor.
- Explore ways to reduce execution time, including using pipeline, different types of multipliers, and the CORDIC algorithm.
- Implement hardware blocks to realize the CORDIC algorithm with pipeline.
- Results show the use of dedicated hardware reduces the execution time significantly with increase in hardware usage.

Adding Features to Visual2, the Arm Assembly Simulator

London, United Kingdom

Team Project

Jan. 2019 - Mar. 2019

- Add new features to Visual2, including pipelining display, multiplication instructions and improvement to the error messages.
- Code in F# and JavaScript.

Second Year Project

London, United Kingdom

Team Project

Nov. 2017 - Mar. 2018

- Gloves with sensors built in to detect palm facing, acceleration and finger bending for sign language translation.
- Machine learning model training with readings from sensors.
- Sign language translation achieved by feeding sensor readings to machine learning models.

First Year Project

London, United Kingdom

Team Project

Nov. 2016 - May. 2017

- Build a remote-control rover that is able to detect electromagnetic waves and measure frequencies.

Honors and Awards

Graduate Merit Scholarship

College Station, United States

Texas A&M University

Aug. 2020

- From the Department of Electrical and Computer Engineering.