

# David D. Zhang

SOFTWARE ENGINEER · LINUX KERNEL DEV. · MACHINE LEARNING

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Software engineer with solid background of digital signal processing, statistics, and strong fundamentals in Linux and Machine Learning.

## Skills

**Programming** C/C++ (strong), Python (strong), MATLAB (strong), LaTeX

**OS & RTOS** Linux, Windows, FreeRTOS

**AI Frameworks** TensorFlow

## Experience

### Advanced Micro Devices (AMD)

Markham, ON, Canada

SENIOR SOFTWARE DEVELOPMENT ENGINEER

2019/03 - Present

- GPU display kernel mode driver (KMD) development for Linux/Android
- Design & develop & implement new display features for semi-customed SoC to gain better power optimization
- Automation test platform (igt-gpu-tools) sustain & design & development, and upstreaming for AMD GPU
- Design & develop & implement features on display firmware, and Python-based tool development for firmware debugging & analysis
- Lead the sustaining for semi-customed SoC program as ScrumMaster with cross-team collaboration and interaction with external customer

### Maynt Inc.

Toronto, ON, Canada

FIRMWARE ENGINEER

2017/07 - 2019/03

- Developed peripherals driver for ARM microcontroller based biomedical metrics analysis applications
- Direct collaboration with Machine Learning/Data scientists, designed/developed/optimized embedded DSP algorithms to extract bio-metrics (e.g. ECG) for real-time low-power constrained applications on RTOS
- Designed and developed python-based (numpy/matplotlib/BLE) tool on Linux to validate/test the functionalities and DSP algorithm of embedded system and feature analysis

### Mircom Group of Companies

Vaughn, ON, Canada

EMBEDDED SOFTWARE ENGINEER (INTERN)

2017/01 - 2017/06

- Developed firmware features for a ARM Cortex-M4 microcontroller (NXP KW24D512) based fire alarm control system.
- Developed desktop App for Fire Alarm System Configurator using C++ and Qt framework

### McMaster University

Hamilton, ON, Canada

GRADUATE RESEARCH AND TEACHING ASSISTANT

2013/09 - 2016/06

- Lead the project of design and validation of an optical intensity communications system for bandlimited and power constrained application, published 3 top-tier papers, i.e. 2 conference (ICC) and 1 IEEE journal (TCom.)
- Designed and implemented numerical simulation software packages (modulation, detection, time/frequency domain analysis, etc.) using Python/C/MATLAB

### Bocong Information Technology (startup)

Shanghai, P.R.China

COMPUTER VISION ALGORITHM ENGINEER (INTERN)

2011/02 - 2011/10

- R&D based on academic papers, implemented background subtraction algorithms (GMM-based) for intelligent video surveillance based on high-resolution digital camera, using C++ and OpenCV
- Optimization to improve the application processing time per frame from 80 to 15 ms based on SIMD (AVX).

## Education

### McMaster University

Hamilton, ON, Canada

M.A.Sc. IN ELECTRICAL AND COMPUTER ENGINEERING

2013/09 - 2016/06

- Outstanding Thesis Award 2016 "Bandlimited Optical Intensity Modulation Under Average and Peak Power Constraints"

### Fudan University

Shanghai, China

B.ENG. IN COMMUNICATIONS SCIENCE AND ENGINEERING

2006/09 - 2010/06

## Honors & Awards & Certificates

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### CERTIFICATES

2022.01 **Coursera**, Deep Learning Specialization

2021.11 **Coursera**, Machine Learning