SHAO-HUNG CHIU

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EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Electrical and Computer Engineering December 2020
GPA: 3.89/4.0
Courseworks:
(2019 Fall) Foundations of Computer Systems, How to Write Fast Code (HPC), Analytical Modeling and Designs of Computer Systems
(2020 Spring) Computer Architecture and Systems, Java programming, Cloud Computing

National Tsing Hua University Hsinchu, Taiwan
Bachelor of Electrical Engineering January 2019
Overall GPA: 4.0/4.3 Major GPA: 4.19/4.3
Relevant Courses: Computer Architecture, OS, Algorithms, Digital Systems Design, Microprocessor Systems

SKILLS

Programming Languages	C/C++, Java, Python, MATLAB
Tools	Verilog, Linux OS
Languages	English, Chinese (Native)

WORK EXPERIENCE

ASPEED Technology Inc. Hsinchu, Taiwan
Intern July 2018 - August 2018
• Researched Super Resolution algorithms within recent 2 years with low computation complexity and assisted ASPEED to evaluate potential IP usage
• Introduced Efficient Inference Engine Design to illustrate domain-specific algorithms and architecture by giving a talk to 30 staff members in ASPEED
• Built machine learning models and clarified analytical tools on several frameworks such as Caffe and Tensorflow for ASPEED's further research

BIIC Lab Hsinchu, Taiwan
Research Assistant October 2017 - January 2018
• Collaborated with Gamania to operate on real-world video data up to hundreds of GB and innovated on potential interview assisting products
• Utilized machine learning techniques on Human Behavioral Analysis, reaching almost 70% accuracy on image data
• Performed various feature extraction methods with Python package OpenCV for further analysis and better accuracy

ACADEMIC PROJECTS

Fast Kernel of G3PCX Pittsburgh, PA
Carnegie Mellon University September 2019 - December 2019
• Analyzed genetic algorithms and identified bottleneck operations and independent chains to achieve instruction-level parallelism
• Designed fast kernels and corresponding data structures to accelerate computations to over 80% of theoretical peak
• Utilized SIMD instructions of intel AVX architecture to avoid dependent chains throughout computations and reached 2x speed for crucial functions

Self-Driving Car with Raspberry Pi Hsinchu, Taiwan
National Tsing Hua University January 2018 - January 2019
• Developed a lane following algorithm achieving prompt controls up to 6 frames per seconds by utilizing OpenCV and fitting polynomials with Python3.5
• Scheduled entire 2-semester project and led discussion in routine meetings
• Coordinated 4 teammates' work into 1 stable system involving XBEE, MobileNet, lane following and positioning

Traveling Salesperson Accelerator Hsinchu, Taiwan
National Tsing Hua University December 2018 - January 2019
• Transferred C code to RISCV simulator with elaborate memory management and specific data structures for accurate profiling and further co-processor designs
• Designed RTL-level accelerator to boost up computations with co-processor interface, reducing 59% cycle numbers of bottleneck function