Shao-Hung Chiu

• shaohunc@andrew.cmu.edu • (412) 889-1745 • https://tomchiu5566.github.io/

EDUCATION

Carnegie Mellon University, *Pittsburgh, PA*
Master of Science in Electrical and Computer Engineering *Aug. 2019 – Dec. 2020*
GPA: 3.75 / 4.00
Courseworks: [Current] Embedded System Software Engineering, Reconfigurable Logic (FPGA), Coding Boot Camp [Past] Cloud Computing, Foundations of Computer Systems, How to Write Fast Code (HPC), Computer Architecture and Systems

National Tsing Hua University, *Hsinchu, Taiwan*
Bachelor of Electrical Engineering *Sep. 2015 – Jan. 2019*
GPA: 4.00 / 4.30 Major GPA: 4.19 / 4.30
Relevant Courses: Computer Architecture, OS, Algorithms, Digital Systems Design, Microprocessor Systems

SKILLS

Programming Languages: C/C++, Java, Python, MATLAB, Scala
Frameworks: Azure, AWS, GCP, MapReduce, Docker, Kubernetes, Spark
Databases: MySQL, HBase, MongoDB
Design Tools: Verilog, Linux OS

WORK EXPERIENCE

TEEL Lab, *Pittsburgh, PA*
Intern *May. 2020 – Aug. 2020*
- Delivered SAIL Data Engineering course project introducing Apache Spark and Azure Databricks with contexts, reference documents, starter code and interactive project evaluation systems for high-quality Computer Science study
- Developed extended microservice features on Auto-Grading Service using Azure Front Door, Azure Kubernetes and Azure CI/CD deployment pipeline to ensure robustness of services

ASPEED Technology Inc., *Hsinchu, Taiwan*
Intern *Jul. 2018 – Aug. 2018*
- Researched Super Resolution algorithms on Caffe and Tensorflow machine learning frameworks 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

ACADEMIC PROJECTS

Cloud Computing Projects, *Pittsburgh, PA*
Carnegie Mellon University *Jan. 2020 – Present.*
- Built docker container images and deployed Kubernetes for load balancing, autoscaling and cluster management
- Deployed cloud infrastructures using Infrastructure as Code such as Terraform to achieve efficient cloud service management
- Constructed full-stack Twitter recommendation systems based on 1TB Twitter data implemented by Spark, MySQL Database, and NoSQL Database

Fast Kernel of G3PCX, *Pittsburgh, PA*
Carnegie Mellon University *Sep. 2019 – Dec. 2019*
- Analyzed G3PCX and designed fast kernels and data structures to accelerate computations to over 80% of theoretical peak
- Exploited SIMD instructions of Intel AVX architecture to avoid dependent chains throughout computations and reached 2x speed for bottleneck functions

Self-Driving Car with Raspberry Pi, *Hsinchu, Taiwan*
National Tsing Hua University *Jan. 2018 – Jan. 2019*
- Developed a lane following algorithm achieving prompt controls up to 6 frames per seconds by utilizing OpenCV and NumPy polynomial functions with Python 3.5
- 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