Yuntao Lu

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EDUCATION

University of Texas at Austin (UT-Austin)   Austin, TX

Master of Science in Information Studies   Aug. 2018 - May 2020

Track: Data Science GPA: 3.7872/4.0

University of Science and Technology of China (USTC)   Hefei, Anhui, China

Master of Science in Computer Science   Sep. 2015 - Jun. 2018

Track: Computer Systems and Architectures GPA: 3.21/4.0

University of Electronic Science and Technology of China (UESTC)   Chengdu, Sichuan, China

Bachelor of Engineering in Software Engineering   Sep. 2011 - Jun. 2015

Track: Embedded Systems GPA: 3.84/4.0

ACADEMIC EXPERIENCE

Graduate Research Assistant   Hefei, Anhui, China

Embedded Systems Laboratory (ESL) of USTC   Oct. 2015 - May 2018

• Responsibilities

  - Trained and extracted sparse weight parameters of neural networks (Caffe).

  - Compressed the sparse weight matrix to reduce the stored space memory, and designed accelerating computations for AI algorithm inference.

  - Simulated and evaluated performance for the accelerated architecture by Xilinx Vivado High-level-Synthesis Toolkit.

Teaching Assistant   Austin, Texas, U.S.

Lyndon B. Johnson School of Public Affairs, UT-Austin   Sep. 2019 - Dec. 2019

• Responsibilities

  - Retrieved and pre-processed text features of 5-year taxpayer files in Texas of nonprofit organizations with Python Pandas, NLTK, and IRSx packages.

  - Constructed a 26-class neural network classifier with keyword hitting method.

  - Assisted to hold a data hackathon of classifying and profiling from the 5-year tax records in Texas of the nonprofits on Texas Advanced Computing Center (TACC).

Teaching Assistant   Hefei, Anhui, China

School of Software Engineering of USTC   Sep. 2016 - Dec. 2016

• Responsibilities

  - Instructed 50 fresh graduates for experiments of an embedded operating system migration.

  - Experiments: conducting build essentials and cross-compilation environments, and modifying source codes of embedded operating systems for the development board.

INDUSTRIAL EXPERIENCE

Machine Learning Engineer Intel Corporation

Dept. of AIPC Framework Validation Jan. 2022 - At present

- Responsibilities
  - Release Intel Optimization for TensorFlow products periodically, regarding product security and quality requirements.
  - Support products: Intel Optimization for TensorFlow(Intel-TF), Intel OneAPI AI Analytics Toolkit(Intel-AIKit)
- Projects

  Intel Optimization for TensorFlow Framework

  - Built Intel-TF ManyLinux2014 PyPi wheels and Anaconda Distribution packages following the cut-off period.
  - Revised automatic scripts and validated released Intel-TF binaries with Docker containers and generated daily reports with accuracy, latency, throughput metrics of AI models.

  Intel Optimization for TensorFlow component in Intel OneAPI AI Analytics Toolkit

  - Delivered the Intel-TF Anaconda Distribution package as well as third-party dependencies into Intel-AIKit.
  - Investigated and fixed vulnerabilities on the basis of product release processes to give Intel-TF component successive support.

AI Applied Engineer Institute of Computing Technology, Chinese Academy of Sciences

AI Processors Research Center Aug. 2020 - Dec. 2021

- Responsibilities
  - Deploy AI models software development toolkits(SDKs) on AI specific chips with(Cambricon MLUs).
  - Construct AI-based applications for Cambricon MLUs.
- Projects

  Interface functions for a penetration decision system

  - Deployed chip drivers, SDKs, and a stream processing framework(CNStream) on Cambricon MLU-based Embedded board.
  - Implemented RX/TX functions following the customized communication protocol as well as interface functions for packing stream packages, triggering object detection algorithm (tiny YOLOv3), controlling device components with C/C++ multi-processing.

  Validations of Optimization AI models

  - Generated optimized AI models of various deep learning frameworks, including TensorFlow, PyTorch, and Caffe, with Cambricon quantize tool on Cambricon MLUs.
  - Validated optimized AI models with accuracy, latency and throughput metrics over CPU/GPU baselines.

PUBLICATIONS

- **SparseNN: A Performance-Efficient Accelerator for Large-Scale Sparse neural Networks.**

  Yuntao Lu Lei Gong, Chao Wang, Xuehai Zhou. International Journal of Parallel Programming, 46(4), 648-659. Available Link: https://link.springer.com/article/10.1007/s10766-017-0528-8

- **A High h-performance FPGA Accelerator for Sparse Neural Networks: Work in Progress.**

  Yuntao Lu, Lei Gong, Chongchong Xu, Fan Sun, Yiwei Zhang, Chao Wang, Xuehai Zhou. In Proceedings of the 2017 International Conference on Compilers, Architectures and Synthesis for Embedded Systems Companion (p.12), ACM. Available Link: https://doi.org/10.1145/3125501.3125510

- **Chapter 6: Overview of Neural Network Accelerators**

  Yuntao Lu, Chao Wang, Lei Hong, Xi Li, Aili Wang and Xuehai Zhou. High Performance Computing for Big Data: Methodologies and Applications. Available Link: https://www.routledge.com/High-Performance-Computing-for-Big-Data-Methodologies-and-Applications/Wang/p/book/9781498783996

HONORS

Honor Award of Competition Dream Cup Chinese Youth IC Technology Competition   Apr. 2022

The Chinese Association of Young Scientists And Technologists

- To award teams in the final round of the competition, ranking 9/12.

Graduate Scholarship of Global Digital Technology Corporation   Dec. 2017

University of Science and Technology of China

- 1,500 CNY to award graduate students who did meaningful researches.

First Grade Graduate Academic Scholarship   Sep. 2015

University of Science and Technology of China

- 11,000 CNY to award graduates who were recommended enrollment to the graduate school.

Graduation with Honors   Sep. 2015

University of Electronic Science and Technology of China

- To award outstanding graduates.

Undergraduate Academic Scholarship of Futong Corporation   Dec. 2014

University of Electronic Science and Technology of China

- 8,000 CNY to award undergraduates who rank in 2% each major.

Top Grade Undergraduate Academic Scholarship   Dec. 2013

University of Electronic Science and Technology of China

- 1,500 CNY to award undergraduates who rank 3% in the major.

First Grade Undergraduate Academic Scholarshi   Dec. 2012

University of Electronic Science and Technology of China

- 1,500 CNY to award undergraduates who rank 4% in the major.

SKILLS

Python, C/C++, TensorFlow, Linux Shell, Docker, Automation Validation (Jenkins)