Jiashen Cao

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INTERESTS

Computer Systems, Architecture and Machine Learning.

EDUCATION

Georgia Institute of Technology
Advisors: Professors Hyesoon Kim and Joy Arulraj

Master of Computer Science, GPA: 4.0 2018 - Present
Core courses: Operating System, Advanced Computer Architecture, Database Implementation.

Bachelor of Computer Science, GPA: 3.86 2015 - 18
Core courses: Machine Learning, Computer Organization, Computer Networks.

RESEARCH POSITIONS

Georgia Institute of Technology 2017 - Present
Graduate Research Assistant

EVA Hardware, is an end to end system for visual data analytics on heterogeneous platforms.

- Designed specialized neural network models to speedup computation on resource constrained devices.
- Designed lossy compression techniques to reduce bandwidth usage between edge devices and cloud.
- Optimized the throughput of the system by designing new scheduling techniques.

Parallel ML, optimizes machine learning inference on edge devices from multiple perspectives.

- Built distributed system to execute inference on multiple devices.
- Analyzed computation performance on various models along with various machine learning frameworks and hardware platforms.
- Designed an easy-to-be parallelized/distributed and fault-tolerant neural network.

PUBLICATIONS

Conference

- Ramyad Hadidi, **Jiashen Cao**, Yilun Xie, Bahar Asgari, Tushar Krishna, Hyesoon Kim. **Characterizing the Deployment of Deep Neural Networks on Commercial Edge Devices**, IISWC 2019. (*Best Paper Nominee*)
- **Jiashen Cao**, Ramyad Hadidi, Joy Arulraj, Hyesoon Kim. **Work-in-Progress: Video Analytics From Edge to Server**, ESWEEK 2019.
- Ramyad Hadidi, **Jiashen Cao**, Michael Ryoo, Hyesoon Kim. **Robustly Executing DNNs in IoT Systems Using Coded Distributed Computing**, LBR-DAC 2019.
- **Jiashen Cao**, Fei Wu, Ramyad Hadidi, Lixing Liu, Tushar Krishna, Micheal S. Ryoo, Hyesoon Kim. **An Edge-Centric Scalable Intelligent Framework To Collaboratively Execute DNN**, Demo-SysML 2019.
- Ramyad Hadidi, **Jiashen Cao**, Matthew Woodward, Michael Ryoo, Hyesoon Kim. **Distributed Perception by Collaborative Robots**, IROS 2018.

Journal

- Ramyad Hadidi, **Jiashen Cao**, Michael Ryoo, Hyesoon Kim. **Towards Collaborative Inferencing of Deep Neural Networks on Internet of Things Devices**, IEEE IoT-J 2019.

Workshops

- Ramyad Hadidi, **Jiashen Cao**, Matthew Merck, Arthur Siqueira, Qiusen Huang, Abhijeet Saraha, Chunjun Jia, Bingyao Wang, Dongsuk Lim, Lixing Liu and Hyesoon Kim. **Understanding the Power Consumption of Executing Deep Neural Networks on a Distributed Robot System**, LSAF-ICRA 2019.
- Ramyad Hadidi, **Jiashen Cao**, Matthew Woodward, Michael Ryoo, Hyesoon Kim. **Real-Time Image Recognition Using Collaborative IoT Devices**, ReQuEST-ASPLOS 2018.

TEACHING EXPERIENCE

CS 3220 - Processer Design 2019
Head Teaching Assistant

- Helped students to debug Verilog programming and to understand hardware processer design abstract.

INDUSTRIAL EXPERIENCE

Clinc AI 2018
Software Engineer Intern

- Worked on speeding up the Python to Cython compilation process.
- Built large scale continuous deployment and continuous integration environment on Kubernetes cluster along with AWS service.

Advent Software 2016
Software Engineer Intern

- Automated the user interface testing and visualised the testing results.

REFERENCES

Hyesoon Kim
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Georgia Institute of Technology
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Joy Arulraj
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Michael Ryoo
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Stony Brook University
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