

JEONG, GEONHWA

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RESEARCH INTERESTS

Computer architecture, Hardware/software co-design, Domain specific accelerators,
Reconfigurable architecture, Computer system design for big data, Deep learning

EDUCATION

Ph.D. Student in Computer Science

Aug. 2019 - Current

Advisor: Prof. Tushar Krishna

Georgia Institute of Technology (Georgia Tech)

Bachelor of Science in Creative IT Engineering

Mar. 2013 - Feb. 2019

Double Major in Computer Science and Engineering

Summa Cum Laude

Pohang University of Science and Technology (POSTECH)

RESEARCH EXPERIENCES

Synergy Lab at Georgia Tech

Nov. 2019 - Current

Research Assistant (Advisor: Prof. Tushar Krishna)

Atlanta, USA

To fully exploit available parallelism in spatial accelerators, it is important to schedule and map the input data efficiently to the processing elements maximizing data reuse. I am working on optimizing the dataflow considering both software and hardware.

High Performance Architecture Lab at Georgia Tech

Sep. 2019 - Nov. 2019

Research Student (Advisor: Prof. Hyesoon Kim)

Atlanta, USA

The Unified Virtual Memory with GPU and CPU not only gets rid of programmers burden a lot but also enables running a program with the working set size larger than the GPU capacity. I worked on efficient page prefetching mechanisms with various workloads.

Computer Vision Lab at POSTECH

Sep. 2018 - Feb. 2019

Research Student (Advisor: Prof. Suha Kwak)

Pohang, Republic of Korea

Since there has been the disparity between target task and surrogate task for self-supervised learning, our team conducted the research on task-specific self-supervised learning with object detection as the target task.

Compiler Optimization Research Lab at POSTECH

Sep. 2017 - June 2018

Research Student (Advisor: Prof. Hanjun Kim)

Pohang, Republic of Korea

I was engaged in three projects including implementation of IoT platform for various types of users (manufacturer, service developer, user), development of programmable magnetic blocks to teach computational thinking to kids and development of hot function/basic block detector using LLVM compiler.

Database and Data Mining Lab at POSTECH*Research Student (Advisor: Prof. Wook-Shin Han)*

Mar. 2015 - Nov. 2015

Pohang, Republic of Korea

I was involved in a team to develop a new graph database system which can process a large amount of streaming data. I participated in the initial design of the query processing engine and the development of memory management system to support the engine.

Computer Graphics and Vision Lab at KAIST*Research Student (Advisor: Prof. Jinah Park)*

June 2012 - Dec. 2012

Daejeon, Republic of Korea

I led a research project to reconstruct 3D images of the brain using 2D medical images. Given manual segmentation of the certain region in 2D images from doctors, the system provided the reconstructed 3D image of the segmented region and predicted area.

WORK EXPERIENCES

VoyagerX*Software Engineer*

Feb. 2019 - July 2019

Seoul, Republic of Korea

I developed a mobile application for automatic meeting notes with speaker diarization using a deep learning model to extract feature vectors from voice data.

Samsung Research*Field Training*

July 2018 - Aug. 2018

Seoul, Republic of Korea

I was involved in a team developing a cloud management system, which is used by the members of Samsung Research to develop their own programs, in GitOps manner to keep the more robust system.

Korea Augmentation to the US Army*Service Member*

Nov. 2015 - Aug. 2017

Seoul, Republic of Korea

I served mandatory military service as a movement specialist with the United States Army and participated in three combined exercises (KR 17, UFG 17, and KR 18).

Kakao Corp.*Intern*

Jan. 2015 - Feb. 2015

Seongnam, Republic of Korea

I developed an abuse detection system to automatically identify abusers to prevent general users from being exposed to inappropriate posts and comments.

PUBLICATIONS

[1] Kyoungmin Kim, In Seo, Wook-shin Han, Jeong-Hoon Lee, Sungpack Hong, Has-san Chafi, Hyungyu Shin, **Geonhwa Jeong**. 2018. "TurboFlux: A Fast Continuous Subgraph Matching System for Streaming Graph Data." Proceedings of the 44th International Conference on Management of Data, ACM SIGMOD, Houston, USA.

[2] **Geonhwa Jeong**, Jaeil Kim, Taeho Kim, Jinah Park. 2012. "3D Interactive Visualization Method with Confirmation and Prediction of the Object Shape for Assistance of Manual Image Segmentation." Proceedings of the 39th KIISE Fall Conference, Korea.

HONORS AND AWARDS

Scholarship from Kwanjeong Educational Foundation	Sep. 2019 - Current
University Scholarship for Student Mentoring Program	Sep. 2017 - Dec. 2018
National Scholarship from ICT Creative Consilience Program	Mar. 2013 - Feb. 2019
Scholarship from Korea Hydro & Nuclear Power	Mar. 2018
Army Achievement Medal from the US Army	Aug. 2017

SKILLS

Programming	C/C++, Java, Verilog, Ocaml
Scripting	Python, Javascript, PHP
Others	Hadoop, Spark, PyTorch

EXTRA-CURRICULAR ACTIVITIES

Student Mentoring Program at POSTECH	Sep. 2017 - Dec. 2018
Qualcomm IT Tour	June 2018
Einstein Class of Korea Hydro & Nuclear Power	Dec. 2017 - Feb. 2018
Proud Postechian Club	Sep. 2017 - Dec. 2017