

Joon Kyung Kim

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RESEARCH INTERESTS

Computer Architecture • Compiler Optimizations • Operating Systems • Machine Learning

EDUCATION

University of California, San Diego

Ph.D. in Computer Science

Advisor | [Dr. Hadi Esmaeilzadeh](#)

| Expected June 2023

Georgia Institute of Technology

M.S. in Computer Science

Area | Computing Systems

Advisor | [Dr. Hadi Esmaeilzadeh](#)

| May 2018

Georgia Institute of Technology

B.S. in Computer Science

Advisor | [Dr. Hadi Esmaeilzadeh](#)

| May 2016

HONORS AND AWARDS

Distinguished Paper Award in IEEE Symposium on High Performance Computer Architecture

"TABLA: A Unified Template-based Framework for Accelerating Statistical Machine Learning"

| 2016

Georgia Tech President's Undergraduate Research Award

Received a salary award (\$1,500) for the TABLA project

| 2015

William Orr Dingwall Foundation

2011 Korean Ancestry Grant Scholarship Recipient

| 2011

PUBLICATIONS

Conference Papers

- 2018
- [P4] D. Mahajan, **J. Kim**, J. Sacks, A. Ardalan, A. Kumar, H. Esmaeilzadeh, "[In-RDBMS Hardware Acceleration of Advanced Analytics](#)" 44th International Conference on Very Large Data Bases (VLDB), September 2018.
..... 2017
- [P3] J. Park, H. Sharma, D. Mahajan, **J. Kim**, P. Olds, and H. Esmaeilzadeh, "[Scale-Out Acceleration for Machine Learning](#)" 50th International Symposium on Microarchitecture (MICRO), October 2017.
..... 2016
- [P2] H. Sharma, J. Park, D. Mahajan, E. Amaro, **J. Kim**, C. Shao, and H. Esmaeilzadeh, "[From High-Level Deep Neural Models to FPGAs](#)" 49th International Symposium on Microarchitecture (MICRO), October 2016.
- [P1] D. Mahajan, J. Park, E. Amaro, H. Sharma, A. Yazdanbakhsh, **J. Kim**, and H. Esmaeilzadeh, "[TABLA: A Unified Template-based Framework for Accelerating Statistical Machine Learning](#)," 22nd IEEE Symposium on High Performance Computer Architecture (HPCA), March 2016. (**Distinguished Paper Award**)

Technical Reports

2015

- [TR1] D. Mahajan, J. Park, E. Amaro, H. Sharma, A. Yazdanbakhsh, **J. Kim**, and H. Esmaeilzadeh, "**TABLA: A Unified Template-based Framework for Accelerating Statistical Machine Learning**," SMARTech, SCS Technical Report, GT-CS-15-07.

PROFESSIONAL EXPERIENCE

AMAZON.COM | SOFTWARE DEVELOPMENT ENGINEER INTERN

SUMMER 2018 | SEATTLE, WA

TEAM: ALEXA SMART HOME SPACES

MENTOR: [Brent Rood](#) • MANAGER: [Deepthi Prasad](#)

- Developed a web service to support efficient data storage and retrieval for a new Alexa Smart Home Spaces feature.

AMAZON WEB SERVICES | SOFTWARE DEVELOPMENT ENGINEER INTERN

SUMMER 2017 | SEATTLE, WA

TEAM: AWS AURORA POSTGRES

MENTOR: [Arun Sudhir](#) • MANAGER: [Ashutosh Galande](#)

- Designed and implemented a client authentication mechanism for AWS Aurora Postgres and RDS Postgres customers by integrating the AWS IAM (Identity and Authentication Management) service.

DELL SECUREWORKS | SOFTWARE DEVELOPER CO-OP

SPRING 2015, SUMMER 2014, FALL 2013 | ATLANTA, GA

TEAM: CUSTOMER PORTAL TEAM

MENTOR: [Veera Rayala](#) • MANAGER: [Chris Phillips](#)

- Developed a customer web portal system and a company internal tool for visualizing server performance metrics.

TEACHING EXPERIENCE

■ Teaching Assistant

Course	Introduction to Computer Architecture (CSE 141)
Instructor	Dr. Hadi Esmaeilzadeh
Location	University of California, San Diego
Semester	Winter 2019

■ Teaching Assistant

Course	Principles of Computer Architecture (CSE 240A)
Instructor	Dr. Hadi Esmaeilzadeh
Location	University of California, San Diego
Semester	Fall 2018

■ Teaching Assistant

Course	Advanced Compiler Optimizations (CS 6241)
Instructor	Dr. Santosh Pande
Location	Georgia Institute of Technology
Semester	Spring 2018

■ Teaching Assistant

Course	Design and Analysis of Algorithms (CS 3510)
Instructor	Dr. Richard Peng
Location	Georgia Institute of Technology
Semester	Fall 2017

■ Head Teaching Assistant

Course	Design and Analysis of Algorithms (CS 3510)
Instructor	Dr. Merrick Furst
Location	Georgia Institute of Technology
Semester	Spring 2017

■ Teaching Assistant

Course	Design and Analysis of Algorithms (CS 3510)
Instructor	Dr. Richard Peng
Location	Georgia Institute of Technology
Semester	Fall 2016

SKILLS

PROGRAMMING LANGUAGES

- C, C++, Python, Java, Bash

FRAMEWORKS

- LLVM

ARTIFACTS

- TABLA: An accelerator generator for statistical machine learning algorithms | <http://act-lab.org/artifacts/tabla>
- DNNWEAVER: Framework for accelerating Deep Neural Networks | <http://act-lab.org/artifacts/dnnweaver>

MENTORED STUDENTS

- | | | |
|-----------------------|-------------------------------------|--------------|
| ■ Iris Nayki | | 2018-current |
| Institution | University of California, San Diego | |
| Degree Level | Undergraduate | |
| Major | Computer Engineering | |
| ■ Zheng Jessica Zhong | | 2018-current |
| Institution | University of California, San Diego | |
| Degree Level | Undergraduate | |
| Major | Computer Science | |
| ■ Priyanka Mishra | | 2018-current |
| Institution | University of California, San Diego | |
| Degree Level | Undergraduate | |
| Major | Computer Science | |

PROFESSIONAL ACTIVITIES

PROFESSIONAL MEMBERSHIPS

- ACM SIGARCH Online Membership | Since 2017