# Joon Kyung Kim

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## RESEARCH INTERESTS

Computer Architecture • Compiler Optimizations • Operating Systems • Machine Learning

## EDUCATION

**Georgia Institute of Technology**
M.S. in Computer Science | Expected May 2018
Area | Computing Systems
Advisor | Dr. Hadi Esmaeilzadeh

**Georgia Institute of Technology**
B.S. in Computer Science | May 2016
Advisor | Dr. Hadi Esmaeilzadeh

## HONORS AND AWARDS

**Distinguished Paper Award in IEEE Symposium on High Performance Computer Architecture** | 2016
"TABLA: A Unified Template-based Framework for Accelerating Statistical Machine Learning"

**Georgia Tech President's Undergraduate Research Award** | 2015
Received a salary award ($1,500) for the TABLA project

**William Orr Dingwall Foundation** | 2011
2011 Korean Ancestry Grant Scholarship Recipient

## PUBLICATIONS

### Conference Papers

2017

[P3] J. Park, H. Sharma, D. Mahajan, **J. Kim**, P. Olds, and H. Esmaeilzadeh, "Scale-Out Acceleration for Machine Learning" $50^{th}$ 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" $49^{th}$ 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," $22^{nd}$ 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.

### In Progress

2017

[P1] D. Mahajan, **J. Kim**, A. Ardalan, A. Kumar, and H. Esmaeilzadeh, **"In-RDBMS Hardware Acceleration of Advanced Analytics"** $44^{th}$ International Conference on Very Large Data Bases (VLDB 2018).

## PROFESSIONAL EXPERIENCE

**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 the customer web portal system and a company internal tool for visualizing server performance metrics.

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## 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

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## TEACHING EXPERIENCE

- **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

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## SKILLS

**PROGRAMMING LANGUAGES**
- C, C++, Python, Java, Bash

**FRAMEWORKS**
- LLVM