

# Joon Kyung Kim

<https://jkim796.github.io/>  
jkim@eng.ucsd.edu | (352).240.4187

---

## 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](#)" 44<sup>th</sup> 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](#)" 50<sup>th</sup> 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<sup>th</sup> 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<sup>nd</sup> 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. Esmailzadeh, "TABLA: A Unified Template-based Framework for Accelerating Statistical Machine Learning," SMARTech, SCS Technical Report, GT-CS-15-07.
- 

## PROFESSIONAL EXPERIENCE

**BIGSTREAM SOLUTIONS, INC. | HARDWARE ENGINEER INTERN**  
SUMMER 2019 | MOUNTAIN VIEW, CA

MENTOR: [Brian Hirano](#)

- Designed and implemented software API for acceleration infrastructure for big data analytics platforms.

**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 feature for AWS Aurora Postgres and RDS Postgres that authenticates through AWS IAM (Identity and Authentication Management) credentials.

**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 Esmailzadeh](#)  
Location | University of California, San Diego  
Semester | Winter 2019

### ■ Teaching Assistant

Course | Principles of Computer Architecture (CSE 240A)  
Instructor | [Dr. Hadi Esmailzadeh](#)  
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

### CONFERENCE REVIEWS

- ISCA | 2019

### STUDENT ADMISSIONS COMMITTEE

- UC San Diego Computer Science and Engineering PhD program student admissions committee | 2019

### PROFESSIONAL MEMBERSHIPS

- ACM SIGARCH Online Membership | Since 2017