

Mohammadkazem Taram

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Research Interests

Computer Architecture, Security and Privacy, Secure Architectures, Microarchitectural Attacks

Education

- Sep 2016-2022 (Expected) **University of California San Diego**
PhD., Computer Science and Engineering
Thesis: Microarchitectural Defenses for Microarchitectural Attacks
Advisor: [Prof. Dean Tullsen](#)
- Sep 2013-Sep 2015 **Sharif University of Technology**
M.S., Computer Engineering
Thesis: Compiler-Assisted Architectures for Embedded Systems
Advisor: Prof. Alireza Ejlali
GPA: 19.51/20 (ranked 2nd)
- Sep 2009-Sep 2013 **Shahid Beheshti University**
B.S., Computer Engineering
GPA: 17.83/20 (ranked 2nd)

Honors and Awards

- Jan 2021 | **Qualcomm Innovation Fellowship Finalist**
- Nov 2020 | **Top Picks in Hardware and Embedded Security**
My ASPLOS'19 paper selected as one of the 7 top picks in the broad area of hardware and embedded security that were published during the 6-year period of 2014–2019
- Jan 2019 | **IEEE Micro Top Picks in Computer Architecture**
My ISCA'18 paper selected as one of the 12 top picks of architecture papers of the year
- Sep 2016 | **Jacobs School Focht-Powell 3-years Fellowship**
A prestigious fellowship offered to top incoming PhD students
- Oct 2013 | **Ranked 1st in Iran's National Digital System Design Contest (FPGA Challenge)**
Sharif University of Technology

Publications

- USENIX'22 | SecSMT: Securing SMT Processors against Contention-Based Covert Channels
Mohammadkazem Taram, Xida Ren, Ashish Venkat, Dean Tullsen
USENIX Security Symposium (USENIX Security), 2022 (to appear).
- IEEE D&T'22 | Mitigating Speculative Execution Attacks via Context-Sensitive Fencing
Mohammadkazem Taram, Ashish Venkat, Dean Tullsen
IEEE Design & Test, Special Issue on Top Picks from Hardware and Embedded Security (to appear).
- ISCA'21 | I See Dead μ ops: Leaking Secrets via Intel/AMD Micro-Op Caches
Xida Ren, Logan Moody, **Mohammadkazem Taram**, Dean Tullsen, Ashish Venkat
International Symposium on Computer Architecture (ISCA), June, 2021.
- WWW'21 | Not All Features Are Equal: Discovering Essential Features for Preserving Prediction Privacy
Fatemehsadat Mireshghallah, **Mohammadkazem Taram**, Ali Jalali, Ahmed Taha Elthakeb, Dean Tullsen, Hadi Esmaeilzadeh
The Web Conference (WWW), Apr, 2021.
- ISCA'20 | Packet Chasing: Spying on Network Packets over a Cache Side-Channel
Mohammadkazem Taram, Ashish Venkat, Dean Tullsen
International Symposium on Computer Architecture (ISCA), June, 2020.
- ASPLOS'20 | Shredder: Learning Noise Distributions to Protect Inference Privacy
Fatemehsadat Mireshghallah, **Mohammadkazem Taram**, Prakash Ramrakhiani, Ali Jalali, Dean Tullsen, Hadi Esmaeilzadeh
Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2020.
- IEEE Micro'19 | Context-Sensitive Decoding: On-Demand Microcode Customization for Security and Energy Management
Mohammadkazem Taram, Ashish Venkat, Dean Tullsen
IEEE Micro, Special Issue on the Top Picks from the Computer Architecture Conferences.
- ASPLOS'19 | Context-Sensitive Fencing: Securing Speculative Execution via Microcode Customization
Mohammadkazem Taram, Ashish Venkat, Dean Tullsen
Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2019.
★ Selected for Top Picks in Hardware and Embedded Security.
- ISCA'18 | Mobilizing the Micro-Ops: Exploiting Context Sensitive Decoding for Security and Energy Efficiency
Mohammadkazem Taram, Ashish Venkat, Dean Tullsen
International Symposium on Computer Architecture (ISCA), June, 2018.
★ Selected for IEEE Micro Top Picks in Computer Architecture.
- NOCS'16 | TooT: An Efficient and Scalable Power-Gating Method for NoC Routers
Hossein Farrokhbakht, **Mohammadkazem Taram**, Behnam Khaleghi, Shaahin Hessabi
International Symposium on Networks-on-Chip (NOCS), 2016.

Patents

Fatemehsadat Mireshghallah, Hadi Esmailzadeh, **Mohammadkazem Taram**, “Method and System of Learning Noise on Information from Inferences by Deep Neural Network,” (Under Review).

Teaching Experience

University of California San Diego

- *Instructor*, Introduction to Computer Architecture ([CSE-141](#)), Summer 2021,
 - ★ strongly recommended by 93.2% of students in the post-class instructor evaluation, [Full Evaluation](#)
- *Instructor*, Introduction to Computer Architecture Lab ([CSE-141L](#)), Summer 2021,
 - ★ strongly recommended by 94.4% of students in the post-class instructor evaluation, [Full Evaluation](#)
- Teaching Assistant, Introduction to Computer Architecture (CSE-141), Fall 2020
- Teaching Assistant, Introduction to Computer Architecture (CSE-141), Spring 2019

Sharif University of Technology

- Lab Instructor, Computer Architecture Lab (CE-103), Spring 2015
- Teaching Assistant, Low Power Design (CE-727) , Fall 2014
- Teaching Assistant, Digital System Design (CE-223), Fall 2014

Shahid Beheshti University

- Workshop Instructor, Fundamentals of Web Development , Fall 2012
- Teaching Assistant, Advanced Programming Course , Spring 2011

Media Coverage

- Our research on *micro-op cache vulnerability* published at ISCA 2021 received widespread media coverage by multiple international technology news and mainstream media outlets in May 2021: [Ars Technica](#), [iNews](#), [tom's HARDWARE](#), [phronix](#), [Science Daily](#)
- Our research on *Packet Chasing Attack* published at ISCA 2020 listed by NIST as a medium severity vulnerability in Sep 2019: [CVE-2019-11184](#).

Diversity, Inclusion, and Mentoring

- Moderator, [MyCSPHD.org](#) event, 2021
An online information session about getting a PhD. in Computer Science
- Mentor in the Meet-a-Senior-Student program at ASPLOS, 2021
- Mentor in the Graduate Women in Computing (GradWIC) Mentorship program at UCSD, 2020

- Mentor in GradPal program at UCSD, 2020

A program to help new students settle in by providing them with support to ease their transition into graduate life.

- Mentor in Regents Scholars Research Initiative (RSRI) at UCSD, 2019

A program that gets students involved in research projects in their freshman and sophomore years.

- Mentor in San Diego Summer Training Academy for Research Success (STARS) at UCSD, 2018

A summer research program for community college, undergraduate, and masters students.

- Mentor in ENLACE Program at UCSD, 2018

A bi-national summer research program for high school and college students of Baja California/San Diego.

Research Mentoring

2020 - Present Hosein Yavarzadeh, PhD. Student Advised by Dean Tullsen
2020 - Present Zixuan Wang, PhD. Student Advised by Jishen Zhao
2021 - Present Jiayan Dong , Bachelors/Masters Student
 Spring 2021 Alex Garza, Bachelors/Masters Student
 Spring 2021 Andrew Tang, Bachelors/Masters Student
Summer 2019 Gaofeng Dong, Visiting Student
Summer 2018 Jiang Zhifeng, Visiting Student
 2018 - 2020 Rahul Nemmani, Bachelors Student (UCSD RSRI Program)
Summer 2018 Kevin Jayesh Patel, Bachelors Student (UCSD STARS Program)
Summer 2018 Pamela Silva Cárdenas, Bachelors Student (UCSD ENLACE Program)

Professional Service

The International Conference on Learning Representations (ICLR'22)

Reviewer Mentee

Distributed and Private Machine Learning (DPML@ICLR'21)

Program Committee Member

USENIX Symposium on Operating Systems Design and Implementation (OSDI'20)

Artifact Evaluation Committee

Hardware and Architectural Support for Security and Privacy (HASP'20 and HASP'21)

Program Committee Member

ML for Computer Architecture and Systems Workshop at ISCA'20

Program Committee Member

ACM Transactions on Architecture and Code Optimization (TACO), 2019

Reviewer

UCSD CSE Faculty Recruiting

Member of Graduate Student Panel for 2017 and 2018 Cycles

Journal of Computer Science and Technology

Reviewer

World Scientific Journal of Circuits, Systems, and Computers

Reviewer

References

Dean Tullsen

Professor, UC San Diego

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Ashish Venakt

Assistant Professor, University of Virginia

venkat@virginia.edu

Deian Stefan

Assistant Professor, UC San Diego

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