

Rachit Nigam

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Experience

Massachusetts Institute of Technology

ASSISTANT PROFESSOR

Starting 01/2026

Department of Electrical Engineering and Computer Science (EECS)

Jane Street LLC

PRE-FACULTY SCHOLAR

01/2025 – 12/2025

Researcher in the Ultra Low Latency (ULL) and Tools & Compilers teams.

Cornell University

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE

09/2018 – 05/2025

Thesis: *Modular Abstractions for Efficient Hardware Design.*

Facebook Reality Labs

RESEARCH INTERN

05/2019 – 09/2019

Intern in the Silicon Design team.

Google

SOFTWARE ENGINEERING INTERN

05/2018 – 09/2018

Intern in the web infrastructure team.

University of Massachusetts Amherst

BACHELORS IN COMPUTER SCIENCE | SUMMA CUM LAUDE

09/2015 – 05/2018

Thesis: *Execution Control for JavaScript*, Distinction with Highest Honors.

Publications

OOPSLA 2024

Unifying Dynamic and Static Interfaces for Accelerator Generation

Caleb Kim, Pai Li, Anshuman Mohan, Andrew Butt, Adrian Sampson, Rachit Nigam

In *Conference on Object-oriented Programming, Systems, Languages, and Applications*.

PLDI 2023

Modular Hardware Design with Timeline Types

Rachit Nigam, Pedro Henrique Azevedo de Amorim, Adrian Sampson

In *ACM SIGPLAN Conference on Programming Language Design and Implementation*.

ASPLOS 2023

Stepwise Debugging for Hardware Accelerators

Griffin Berstein, Rachit Nigam, Chris Gyurgyik, Adrian Sampson

In *Architectural Support for Programming Languages and Operating Systems*.

ASPLOS 2021

A Compiler Infrastructure for Accelerator Generators

Rachit Nigam[†], Samuel Thomas[†], Zhijing Li, Adrian Sampson

([†]*Equally contributing authors*)

In *Architectural Support for Programming Languages and Operating Systems*.

ASPLOS 2021

Vectorization for Digital Signal Processors via Equality Saturation

Alexa VanHattum, Rachit Nigam, Vincent Lee, James Bornholt, Adrian Sampson

In *Architectural Support for Programming Languages and Operating Systems*.

PLDI 2020

Predictable Accelerator Design with Time-Sensitive Affine Types

Rachit Nigam, Sachille Atapattu, Samuel Thomas, Theodore Bauer, Apurva Koti, Zhijing Li, Yuwei Ye, Adrian Sampson, Zhiru Zhang

In *ACM SIGPLAN Conference on Programming Language Design and Implementation*.

Awards

Distinguished Artifact Award , ASPLOS 23	2023
Jane Street Fellowship , Jane Street	2023
Departmental Nominee , Google Fellowship	2020
Finalist , Qualcomm Innovation Fellowship	2020
Outstanding Teaching Assistant , Cornell CIS	2019
Dean's Merit Scholarship , UMass Amherst	2018
Honors Research Fellowship , UMass Amherst	2017
Chancellor's Scholarship , UMass Amherst	2015

Academic Service

Student Research Competition Co-chair , PLDI 25	2025
Program Committee Member , PLDI 25	2025
Student Research Competition Co-chair , PLDI 24	2024
External Review & Artifact Evaluation Committees , OOPSLA 23	2023
Organizer , Workshop on Languages, Tools, and Techniques for Accelerator Design	2023
Organizer , Workshop on Languages, Tools, and Techniques for Accelerator Design	2022
Organizer , Workshop on Languages, Tools, and Techniques for Accelerator Design	2021
Social Chair , PLDI 23	2022
Social Chair , PLDI 22	2021
Social Chair , PLDI 21	2021
Sub-reviewer , ISCA 21	2021
Artifact Evaluation Committee , OOPSLA 20	2020
Artifact Evaluation Committee , PLDI 20	2020
Artifact Evaluation Committee , PLDI 19	2019
Volunteer , SPLASH 18	2018

Other Service

Founder , Programming Languages Tea	2020
Vice-President of CS Graduate Organization , Cornell CIS	2020
Organizer , CAPRA External Talk Series	2020
Organizer , Programming Languages Retreat	2019
Member of Graduate Admissions Committee , Cornell CIS	2019
Mentor , Expand Your Horizons, Cornell	2019
Mentor , Eureka! Girls Inc.	2016