

# Abhishek Tyagi

Personal Website

Email : [abhishektyagi@rochester.edu](mailto:abhishektyagi@rochester.edu)

Mobile : +1-585-505-2022

## EDUCATION

---

### University of Rochester

Ph.D. in Computer Science (Advisor: Dr Yuhao Zhu)

Rochester, NY

Jan 2021 - Present

### Delhi Technological University

Bachelor of Technology in Electrical Engineering

Delhi, DL

Aug 2013 - June 2017

## PUBLICATIONS

---

- Anna Penzkofer, Karim Habashy, **Abhishek Tyagi**, Andreas Bulling, Chris Eliasmith, Yuhao Zhu  
SSPictR: Spatial Semantic Pointer Picture Representation  
*ICLR 2025 (Under Submission)*
- **Abhishek Tyagi**, Reiley Jeyapaul, Chu Zhou, Paul Whatmough, Yuhao Zhu  
Characterizing Soft-Error Resiliency in Arm's Ethos-U55 Embedded Machine Learning Accelerator  
*ISPASS 2024*
- **Abhishek Tyagi**, Yiming Gan, Shaoshan Liu, Bo Yu, Paul Whatmough, Yuhao Zhu  
Thales: Formulating and Estimating Architectural Vulnerability Factors for DNN Accelerators  
*HPCA 2023*
- Kenneth Chen, Budmonde Duinkharjav, Nisarg Ujjainkar, Ethan Shahan, **Abhishek Tyagi**, Jiayi He, Yuhao Zhu, Qi Sun  
Imperceptible Color Modulation for Power Saving in VR/AR  
*SIGGRAPH 2023*
- Budmonde Duinkharjav, Kenny Chen, **Abhishek Tyagi**, Jiayi He, Yuhao Zhu, Qi Sun  
Color-Perception-Guided Display Power Reduction for Virtual Reality  
*SIGGRAPH Asia 2022*
- Kavitha Madhu, Saptarsi Das, **Abhishek Tyagi**, Ankur Deshwal, Joonho Song, Seungwon Lee  
Transport Triggered Near Memory Accelerator for Deep Learning  
*ISCAS 2021*
- **Abhishek Tyagi**, Neeta Pandey, Keerti Gupta  
PFSCl Based Linear Feedback Shift Register  
*ICCTICT 2016*

## PATENT

---

- Yuhao Zhu, **Abhishek Tyagi**, Jiayi He  
Power Reduction of Displays Using Human Color Discrimination  
*US Patent App. 63/83,034*

## RESEARCH & WORK EXPERIENCE

---

### ARM Inc

Research Intern (Machine Learning and Architecture Team)

Austin, TX, USA

May 2022 - Dec 2022

### Samsung Research & Development Institute

Senior Engineer (Device & Systems Group, SAIT-India)

Bengaluru, KA, IND

July 2019 - Dec 2020

### Indian Institute of Science

Research Assistant (CAD Laboratory)

Bengaluru, KA, IND

July 2017 - June 2019

### INRIA

Visiting Research Scholar (Team CAMUS)

Nancy, FR

July - August 2016

### Indraprastha Institute of Information Technology

Research Intern (AMS Lab)

Delhi, DL, IND

October - December 2015

## TEACHING EXPERIENCE

---

### Hajim School of Engineering & Applied Sciences

Graduate Teaching Assistant

Rochester, NY

*August 2021 - May 2022*

- Assistant to the Instructor for CSC 252/452 - **Computer Organization**, and CSC 292/572 Mobile Visual Computing
- Head weekly discussion section & office hours reinforcing lecture topics, help students with homework setups and debugging.

## ACHIEVEMENTS

---

### Selected for Nengo Summer School-2024

University of Waterloo

*2024*

### Recipient of Prime Minister's Fellowship

Delhi Technological University

*2013-2017*

### INRIA Research Scholar

INRIA Nancy

*2016*

### Runner's Up & People's Choice Award (NASA SpaceApp Challenge)

IIT Delhi

*2016*

## PROJECTS

---

**Power Performance improvement in MPSoC:** Implemented a method to predict the critical thread using information on different types of cache misses encountered and using DVFS to scale the voltage & frequency of the cores accordingly

**Miniaturised Potentiostat:** Designed an Arduino-based electronic system to perform electrochemical deposition of Polyaniline (PANI) on ITO glass electrode and glucose sensing.

## PROGRAMMING SKILLS

---

**Languages:** Verilog/System-Verilog, Python, C++, Chisel

**Design Technologies:** Verdi, Design Compiler, SpyGlass, PrimeTime, Pytorch, orCAD PSpice, orCAD Capture, ModelSim, Integrated Synthesis Environment (Xilinx)

## RELEVANT COURSES

---

**Computer Science:** Software Analysis and Improvement [aka Advanced Compilers], Programming Language Design and Implementation, Machine Vision, Design & Analysis of Algorithms, Parallel & Distributed Systems, Mobile Visual Computing, Analytical Methods in Computer Science

## PROFESSIONAL SERVICES AND ACTIVITIES

---

**Cientifico Latino:** Working as a member of the Graduate Student Mentorship Initiative (GSMI) program to help increase the pool of minority scientists and professionals. If you want to know more about how to reach out to prospective advisors for graduate school, check out a piece I wrote [here!](#)

**Artifact Reviewer PPOPP'24:** Served on the artifact reviewer committee for PPOPP 2024.

**Mentor for Fatima Scholarship Program:** Mentoring students through the Fatima Fellowship program while working on research projects to gain research experience before applying for grad school.