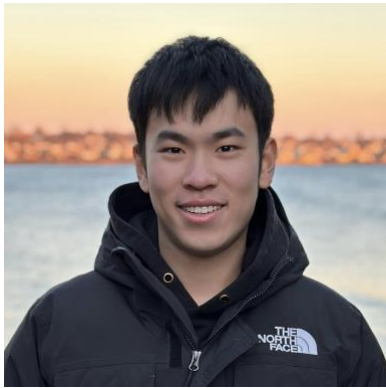




Qiuyuan Wang

Qiuyuan Wang received his B.S. in Physics from Peking University and is currently pursuing his Ph.D. in MIT EECS. His research targets enhancing memory processing and computing powers via in-memory computing using spintronics memories like MRAM. His work heavily employs essential skills in hardware design, computer architecture, and CMOS chip design, with the overarching aim of uncovering ultrahigh-efficiency and low-power computing methods for the evolving digital age.

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Dingyu Shen

I am currently working on devices for analog deep learning accelerators. To solve the overcoming computational bottlenecks for deep learning, analog deep learning accelerators process information locally with specific devices for matrix multiplication calculations and outer product updates. Among them, electrochemical RAMs modulate channel resistance by ionic exchange between the channel and a gate reservoir via an electrolyte. My research focuses on proton-based ionic synapses featuring in-situ protonated WO_3 as channel and phosphorus-doped silicon dioxide (PSG) as electrolyte. This design aims to enable neural network training with enhanced energy efficiency, non-volatility, and low latency.

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Dooyong Koh is a graduate student in the Department of Electrical Engineering and Computer Science at MIT. He received his B.S. in Materials Science and Engineering/Electrical and Computer Engineering from Seoul National University in 2022. His current research interest lies on ferroic probabilistic bits for probabilistic computing and machine learning acceleration, ferroelectric negative capacitors for low-power logic, and organic light-emitting diodes.

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Giho Lee

Research topic: Neuromorphic computing, robust AI accelerator, bio-electronic interface

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**Hae Won Lee**

I am a second year PhD student in Prof. Palacios' group, I focus on synthesizing and characterizing 2D materials for next-gen electronics. Currently, I'm pioneering the fabrication of p-type 2D transistors, aiming to enhance device performance and energy efficiency. My work combines synthesis studies, fabrication techniques and contact engineering to make Si CMOS-comparable 2D transistors. Before joining MIT, I worked in Samsung Electronics as a process design engineer for DRAM products.

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Jinchen Wang is currently pursuing a Ph.D. degree in EECS at MIT. His research interests include digital/RF/mmW/THz/photonic integrated circuits for quantum computing, quantum networks, quantum imaging, wireless communication, and other novel applications. He proposed the first cryo-CMOS THz transceiver, based on Intel 16 technology, for large-scale quantum computing systems, and he is currently working on a large-scale programmable SnV quantum processor and a multi-qubit quantum network hardware based on Intel 16 process.

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Jorge Canada Perez-Sala

Jorge has a background in Industrial and Electrical Engineering. His current research focuses on the 3D printing of electronic components and electromechanical devices. By harnessing the spread and accessibility of common 3D printing technologies, like material extrusion, Jorge's research aims at promoting the democratization of electronic device manufacturing.

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Mohamed Elsheikh

We are working on the development of analog and mixed-signal circuits for analog compute-in-memory machine learning accelerators. We aim to improve the analog-to-digital conversion speed and energy efficiency by building optimized hardware that leverages the output patterns of neural network layers, without sacrificing accuracy. We also investigate the design of the memory cells that interface efficiently with the proposed peripheral circuits for system level improvements.

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Pradyot Yadav received his B.S. in electrical engineering from the Georgia Institute of Technology, Atlanta, GA, USA, in 2022. He is currently working toward his M.S. and Ph.D. at the Massachusetts Institute of Technology. Pradyot has been involved in RF / high frequency circuit design since he was a sophomore in high school. His current research interests lie at the intersection of sub-Thz devices, circuits, and heterogeneous integration. He is involved in the full continuum of chip design from transistor fabrication in the cleanroom, to the design of circuits, to advanced package processing. At IMS 2019, Yadav won first place in the High-Efficiency Power Amplifier Student Design Competition for his GaN Doherty amplifier design as an undergraduate freshman. He has held several R&D internships at companies such as Qorvo, Raytheon, and IBM. He is the recipient of the 2023 IEEE MTT-S Graduate Research Fellowship, the 2023 SRC Jump 2.0 CHIMES Annual Review Best Poster Award, the Georgia Tech Electrical and Computer Engineering (ECE) Best Undergraduate Research Award, and the Intel Andy Grove Scholarship. Yadav is an NDSEG Fellow, a Barry Goldwater Scholar and an Eagle Scout. Yadav has served as a reviewer for the IEEE Electron Device Society. He was also the chair of the 2024 MIT MTL MARC Conference and served on the 2021 IEEE MTT-S IMS steering committee. Aside from his academic research interests, Yadav is an avid electronic design consultant having previously worked on health care monitoring systems and compact, high-voltage x-ray power supply designs.

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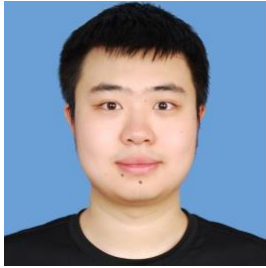
Jung-Han (Sharon) Hsia is a 3rd year Ph.D. student advised by Professor Tomás Palacios. Sharon's research focuses on vertical GaN transistors for high power applications. She is particularly interested in developing novel, optically controlled power transistors to enable high-voltage power electronics with reduced EMI susceptibility, circuit complexity and improved reliability. Throughout her research, she has been exploring heterogeneous integration of optically active materials, design-technology co-optimization of novel device structures, as well as potential optics integration on the packaging level. Besides research, she is also interested in exploring commercialization strategies of semiconductor hard-techs.

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Xibi Chen is currently a Ph.D. student at the Department of Electrical Engineering and Computer Science (EECS), Massachusetts Institute of Technology (MIT), Cambridge, MA. He received his B.S. and M.S. degree from Tsinghua University, Beijing, China, in 2017 and 2020, respectively. From 2015 to 2017, he was a Research Assistant with the Microwave and Antenna Institute, Department of Electronic Engineering, Tsinghua University. He later became a Graduate Student Researcher in the same institute from 2017 to 2019. In 2020, he joined EECS, MIT as a Ph.D. student. His current research focus is high-angular-resolution sub-THz imaging and communications system, with large-scale antenna array (reflectarray), massive chiplet integration, and antenna-in-package (AiP) technologies. He was the recipient of 2024 IEEE MTT-S Graduate Fellowship, as well as IEEE MTT-S Tom Brazil Graduate Fellowship. He was also the recipient of ISSCC 2022 Student Travel Grant Award and Analog Devices Outstanding Student Designer Award.



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My name is **Yanjie Shao**, and I am currently a postdoc researcher working with Prof. Jesus del Alamo. I obtained my PhD from MIT EECS in June 2023. My research focuses on nano-electronics based on emerging semiconductors and oxides, with an emphasis on device architectures for ultra-low power logic, memory, and AI applications. My PhD thesis research was funded by Intel on ultra-scaled III-V Tunnel FETs. I am now working on ferroelectric devices.

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