Theses Awarded

S.M.

- **Tanner Andrulis** (V. SZE)
  Efficient, Accurate, and Flexible PIM Inference through Adaptable Low-Resolution Arithmetic
- **Adina Bechhofer** (L. DANIEL)
  Geometrical Optimization of Planar Nano Vacuum Channel Transistors
- **Zoey Bigelow** (L. VELASQUEZ-GARCIA)
  Solutions to the Generalized UAV Delivery Routing Problem for Last-Mile Delivery with Societal Constraints
- **Mercer Boris** (L. DANIEL)
  AI in the Cath Lab: Implications of Clinical AI-Enabled Assistance for Intravascular Ultrasound Procedures
- **Taylor Facen** (L. DANIEL)
  How Enhanced Data Availability Affects Multi-Channel Marketing Attribution
- **Lauren Heintz** (L. DANIEL)
  Scenario Analysis of Profitability of New Offerings under Different Business Contract Models
- **Alex Kachkine** (L. VELASQUEZ-GARCIA)
  Additively Manufacturing High-Performance, Low-Cost Electrospray Ion Sources for Point-of-Care Mass Spectrometry
- **Quang Kieu** (J. LANG)
  Design and Fabrication of an Electric-Field Induction Motor
- **Ching-Yun (Irene) Ko** (L. DANIEL)
  Revisiting Contrastive Learning through the Lens of Neighborhood Component Analysis
- **Andrew Mighty** (L. DANIEL)
  Autonomous Drone Assisted Aircraft Inspections
- **Aaron Yeiser** (J. LANG)
  A Fully-Implantable Low-Noise EMI-Resistant Piezoelectric-Polymer Micro-phone and Amplifier for the Middle Ear

M. ENG

- **Alejandro Diaz** (L. VELASQUEZ-GARCIA)
  Through Iron & Ice: Searching for Sterile Neutrinos at the IceCube Neutrino Observatory
- **Torque El Dandachi** (K. BERGGREN)
  Efficient Simulation of Large-Scale Superconducting Nanowire Circuits
- **Zachary Gromko** (L. DANIEL)
  Accelerated Channel Operating Margin for Automated Context and Applications to Design Optimization
- **Zhiye Song** (A. CHANDRAKASAN)
  Algorithm and Hardware Co-optimization for Image Segmentation in Wearable Ultrasound Devices: Continuous Bladder Monitoring

PH.D.

- **Saumil Bandyopadhyay** (D. ENGLUND)
  Accelerating Artificial Intelligence with Programmable Silicon Photonics
- **Ruicong Chen** (H.-S. LEE)
  Analog-to-Digital Converters For Secure and Emerging AIoT Applications
- **Rebecca Ho** (H.-S. LEE)
  Driving Emerging Technologies From Concept to Reality: A Case Study of Carbon Nanotubes
- **Jaehwan Kim** (H.-S. LEE)
  Monolithic Integration of Fluidics, Electronics, and Photonics using CMOS Foundry Processes
- **John Lake** (K. VARANASI)
  Physicochemical Interactions at Interfaces: Mass and Charge Transfer at Chemically Reacting Interfaces
- **Victor Leon** (K. VARANASI)
  Active Interfaces: From Biointerfaces to Mineralization
- **Ang-Yu Lu** (J. KONG)
  Artificial Intelligence-Aided Synthesis and Characterization of 2D Materials
- **Elaine McVay** (T. PALACIOS)
  Visible and Infrared Light Detection Using 2D Materials
- **Rishabh Mittal** (H.-S. LEE)
  A Continuous-Time Pipeline ADC with Reduced Sensitivity to Clock Jitter
- **Murat Onen** (J. DEL ALAMO)
  Devices and Algorithms for Analog Deep Learning
- **Crystal Owens** (J. HART)
  Extrusion Printing of Carbon Nanotube Inks, from Rheology to Electronics
- **Jatin Patil** (J. GROSSMAN)
  Rapidly-Deployable Materials Processing Approaches for Energy Applications and Chemical Separations
- **Mihika Prabhu** (R. RAM)
  Large-scale Programmable Silicon Photonics for Quantum and Classical Machine Learning
- **Taqiyyah Safi** (L. LIU)
  Tailoring Charge to Spin Conversion in Novel Materials for Efficient

PH.D. (CONTINUED)

- **Jose E. Cruz Serralles** (L. DANIEL)
  Integral Equation-Based Inverse Scattering and Coil Optimization in Magnetic Resonance Imaging
- **Yanjie Shao** (J. DEL ALAMO)
  Ultra-scaled III-V Vertical Tunneling Transistors
- **Alexander Sludds** (D. ENGLUND)
  Delocalized Photonic Deep Learning on the Internet's Edge
- **Ella Wassweiler** (V. BULOVIC)
  Vapor Transport Deposition for Perovskite Solar Cells
- **Yannan Nellie Wu** (V. SZE)
  Systematic Modeling and Design of Sparse Tensor Accelerators
- **Mantian Xue** (T. PALACIOS)
  Graphene-based Biochemical Sensing Array: Materials, System Design and Data Processing
- **Mengyang Yuan** (T. PALACIOS)
  GaN Electronics for High-Temperature Applications
- **Pengxiang Zhang** (L. LIU)
  Current-induced Dynamics of Easy-Plane Antiferromagnets
- **Zhengxing Zhang** (D. BONING)
  Adjoint Methods and Inverse Modeling for Process Variation Analysis in Silicon Photonics