Xun Jiao

Electrical and Computer Engineering
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PROFESSIONAL EXPERIENCE

Assistant Professor — 08/2018-present
Electrical and Computer Engineering
Villanova University

EDUCATION

Ph.D., Computer Science and Engineering — 09/2013-06/2018
University of California, San Diego

B.S., Telecommunication Engineering and Management — 09/2009-06/2013
Joint Program of
Beijing University of Posts and Telecommunications
& Queen Mary University of London

RESEARCH INTERESTS

My research interests lie in the broad areas of energy-efficient and robust computing, bio-inspired computing, and machine learning, with a focus on designing robust, energy-efficient, and real-time machine intelligence.

- Robust/Resilient Computing (Hardware, AI/ML, Software)
- Applied AI/ML, AI/ML Hardware, Brain-Inspired Computing
- Edge Computing, Embedded System, Design Automation

AWARDS AND HONORS

- IEEE Philadelphia Section Young Engineer of the Year Award (2022)
- Junior Faculty Award at Villanova College of Engineering (2022)
- Best Paper Nomination in IEEE/ACM Design, Automation & Test in Europe Conference (2022)
- Best Paper Nomination in ACM International Conference on Embedded Software (2020)
- Outstanding Paper Award in Euromicro Conference on Digital System Design (2020)
- Best Paper Award in IEEE Workshop on Silicon Errors in Logic – System Effects (2020)
- Best Paper Nomination in ACM International Conference on Embedded Software (2019)
- Best Paper Award in IEEE International Conference on Cyber Physical and Social Computing (2019)

PUBLICATIONS

Journal Publications:

J15 Dongning Ma, Tajana Rosing, Xun Jiao, "Testing and Enhancing Adversarial Robustness of Hyperdimensional Computing", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2023.

J14 Ruixuan Wang, Dongning Ma, Xun Jiao, "EnHDC: Ensemble Learning for Brain-Inspired Hyperdimensional Computing", IEEE Embedded System Letter (**ESL**), 2022.

J13 Mauro Sanchirico III, Xun Jiao, C. Nataraj, "AMITE: A Novel Polynomial Expansion for Analyzing Neural Network Nonlinearities", IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2022.

J12 Dongning Ma, Xinqiao Zhang, Ke Huang, Yu Jiang, Wanli Chang, Xun Jiao, "DEVoT: Dynamic Delay Modeling of Functional Units under Voltage and Temperature Variations", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2021

J11 Xun Jiao, Dongning Ma, Wanli Chang, Yu Jiang, "LEVAX: An Input-aware Learning-based Error Model of Voltage-Scaled Functional Units", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2020

J10 Jian Gao, Yiwen Xu, Yu Jiang, Zhe Liu, Wanli Chang, Xun Jiao, Jiaguang Sun, "EM-Fuzz: Augmented Firmware Fuzzing via Memory Checking Instrumentation", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2020

J9 Jing Huang, Renfa Li, Xun Jiao, Yu Jiang, Wanli Chang, "Dynamic DAG Scheduling on Multiprocessor Systems: Reliability, Energy and Makespan", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2020

J8 Jeng-Hau Lin, Xun Jiao, Mulong Luo, Zhuowen Tu, Rajesh Gupta, "Vulnerability of Hardware Neural Networks to Dynamic Operation Point Variations", IEEE Design & Test (**D&T**), 2020

J7 C. A. K. Kwuimy, Foad Nazari, Xun Jiao, Pejman Rohani, C. Nataraj, "Nonlinear dynamic analysis of an epidemiological model for COVID-19 including public behavior and government action", Nonlinear Dyn, 2020.

J6 Jie Liang, Yu Jiang, Mingzhe Wang, Xun Jiao, Yuanliang Chen, Houbing Song, Kim-Kwang Raymond Choo, "DeepFuzzer: Accelerated Deep Greybox Fuzzing", IEEE Transactions on Dependable and Secure Computing (**TDSC**), 2019.

J5 Jian Gao, Yu Jiang, Zhe Liu, Xin Yang, Cong Wang, Xun Jiao, Zijiang Yang, Jiaguang Sun, "Semantic Learning and Emulation Based Cross-platform Binary Vulnerability Seeker", IEEE Transactions on Software Engineering (**TSE**), 2019.

J4 Dongning Ma, Xun Jiao, "WoMA: An Input-Based Learning Model to Predict Dynamic Workload of Embedded Applications", IEEE Embedded Systems Letters (**ESL**), 2019.

J3 Zhengxiong Luo, Feilong Zuo, Yu Jiang, Jian Gao, Xun Jiao, Jiaguang Sun, "Polar: Function Code Aware Fuzz Testing of ICS Protocol", ACM Transactions on Embedded Computing Systems (**TECS**), 2019.

J2 Xun Jiao, Abbas Rahimi, Yu Jiang, Jianguo Wang, Hamed Fatemi, Jose Pineda de Gyvez, Rajesh K. Gupta, "CLIM: A Cross-level Workload-aware Timing Error Prediction Model for Functional Units", IEEE Transaction on Computers (**TC**), 2018.

J1 Yu Jiang, Hehua Zhang, Xiaoyu Song, Xun Jiao, William N. N. Hung, Jiaguang Sun, "Bayesian Network Based Reliability Analysis of PLC Systems", IEEE Transaction on Industry Electronics (**TIE**), 2013.

Peer Reviewed Conference Publications:

C44 Ruixuan Wang, Yue Qi, Mojtaba Vaezi, Xun Jiao and Moeness Amin, "Strategies for Enhanced Signal Modulation Classifications Under Unknown Symbol Rates and Noise Conditions", IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), Rhodes, Greece, 2023.

C43 Sizhe Zhang, Zhao Wang, Xun Jiao, "Adversarial Attack on Hyperdimensional Computing-based NLP Applications", IEEE/ACM Design, Automation & Test in Europe Conference (**DATE**), Antwerp, Belgium, 2023.

C42 Dongning Ma, Sizhe Zhang, Xun Jiao, "Robust Hyperdimensional Computing Against Cyber Attacks and Hardware Errors: A Survey", IEEE/ACM Asia and South Pacific Design Automation Conference (**ASP-DAC**), Tokyo, Japan, 2023.

C41 Amrouch, Hussam, Paul R. Genssler, Mohsen Imani, Mariam Issa, Xun Jiao, Wegdan Mohammad, Gloria Sepanta, and Ruixuan Wang, "Beyond von Neumann Era: Brain-inspired Hyperdimensional Computing to the Rescue", IEEE/ACM Asia and South Pacific Design Automation Conference (**ASP-DAC**), Tokyo, Japan, 2023.

C40 Ruixuan Wang, Yue Qi, Mojtaba Vaezi, Xun Jiao, Moeness Amin, "Strategies for Enhanced Signal Modulation Classifications Under Unknown Symbol Rates and Noise Conditions", IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), Rhodes island, Greece, 2023.

C39 Dongning Ma, Rahul Thapa, Xun Jiao, "MoleHD: Efficient Drug Discovery using Brain Inspired Hyperdimensional Computing", IEEE International Conference on Bioinformatics and Biomedicine (**BIBM**), Las Vegas, Nevada, 2022.

C38 Hussam Amrouch, Mohsen Imani, Xun Jiao, Yiannis Aloimonos, Cornelia Fermuller, Dehao Yuan, Dongning Ma, Hamza Errahmouni, Paul R. Genssler, and Peter Sutor, "Brain-Inspired Hyperdimensional Computing for Ultra-Efficient Edge AI", International Conference on Hardware/Software Codesign and System Synthesis (**CODES+ISSS**), Shanghai, China, 2022.

C37 Ruixuan Wang, Xun Jiao, and X. Sharon Hu, "ODHD: One-Class Hyperdimensional Computing for Outlier Detection", ACM/EDAC/IEEE Design Automation Conference (**DAC**), San Francisco, CA, 2022.

C36 Sizhe Zhang, Mohsen Imani, and Xun Jiao, "ScaleHD: Robust Brain-Inspired Hyperdimensional Computing via Adapative Scaling", ACM/IEEE International Conference on Computer-Aided Design (**ICCAD**), San Diego, CA, 2022.

C35 Ruixuan Wang, Xun Jiao, "PoisonHD: Poison Attack on Brain-Inspired Hyperdimensional Computing", IEEE/ACM Design, Automation & Test in Europe Conference (**DATE**), 2022.

C34 Sizhe Zhang, Ruixuan Wang, Dongning Ma, Jeff Jun Zhang, Xunzhao Yin and Xun Jiao, "Energy-Efficient Brain-Inspired Hyperdimensional Computing Using Voltage Scaling", IEEE/ACM Design, Automation & Test in Europe Conference (**DATE**), 2022.

C33 Dongning Ma, Xue Qin, and Xun Jiao, "AxBy-ViT: Reconfigurable Approximate Computation Bypass for Vision Transformers", International Symposium on Quality Electronic Design (**ISQED**), Virtual, California, 2022.

C32 Meltem Izzetoglu, Xun Jiao, Seri Park, "Understanding Driving Behavior Using fNIRS and Machine Learning", ASCE International Conference on Transportation and Development (**ICTD**),Virtual, 2021.

C31 Dongning Ma, Jianmin Guo, Yu Jiang, Xun Jiao, "HDTest: Differential Fuzz Testing of Brain-Inspired Hyperdimensional Computing", ACM/EDAC/IEEE Design Automation Conference (**DAC**), San Francisco, CA, 2021.

C30 Xiaolong Guo, Song Han, X. Sharon Hu, Xun Jiao, Yier Jin, Fanxin Kong, and Michael Lemmon, "Towards Scalable, Secure, and Smart Mission-Critical IoT Systems: Review and Vision", International Conference on Embedded Software (**EMSOFT**), 2021.

C29 Ruixuan Wang, Fanxin Kong, Hasshi Sudler, Xun Jiao, "HDAD: Hyperdimensional Computing-based Anomaly Detection for Automotive Sensor Attacks", IEEE Real-Time and Embedded Technology and Applications Symposium (**RTAS**), Virtual Conference, 2021.

C28 Dongning Ma, Rahul Thapa, Xingjian Wang, Cong Hao and Xun Jiao, "Workload-Aware Approximate Computing Configuration", IEEE/ACM Design, Automation & Test in Europe Conference (**DATE**), 2021.

C27 Rahul Thapa, Dongning Ma, Xun Jiao, "HDXplore: Automated Differential Testing of Brain-Inspired Hyperdimensional Computing", IEEE Computer Society Annual Symposium on VLSI (**ISVLSI**), 2021.

C26 Rahul Thapa, Bikal Lamichhane, Dongning Ma, Xun Jiao, "SpamHD: Efficient Text Spam Detection Using Brain-Inspired Hyperdimensional Computing", IEEE Computer Society Annual Symposium on VLSI (**ISVLSI**), 2021.

C25 Xun Jiao, Dongning Ma, Wanli Chang, Yu Jiang, "TEVoT: Timing Error Modeling of Functional Units under Dynamic Voltage and Temperature Variations". ACM/EDAC/IEEE Design Automation Conference (**DAC**), San Francisco, CA, 2020.

C24 Zhengxiong Luo, Feilong Zuo, Yuheng Shen, Xun Jiao, Wanli Chang, Yu Jiang, "ICS Protocol Fuzzing: Coverage Guided Packet Cra'ck and Generation", ACM/EDAC/IEEE Design Automation Conference (**DAC**), San Francisco, CA, 2020.

C23 Jian Gao, Yiwen Xu, Yu Jiang, Zhe Liu, Wanli Chang, Xun Jiao and Jiaguang Sun, "EM-Fuzz: Augmented Firmware Fuzzing via Memory Checking Instrumentation", IEEE/ACM International Conference on Embedded Software (**EMSOFT**), 2020. ***Best Paper Nomination***.

C22 Jing Huang, Renfa Li, Xun Jiao, Yu Jiang and Wanli Chang, "Dynamic DAG Scheduling on Multiprocessor Systems: Reliability, Energy and Makespan", IEEE/ACM International Conference on Embedded Software (**EMSOFT**), 2010.

C21 Dongning Ma, Xun Jiao, "AxBy: Approximate Computation Bypass for Data-Intensive Applications", Euromicro Conference on Digital System Design (**DSD**), ***Outstanding Paper Award***.

C20 Xiaotian Dai, Shuai Zhao, Yu Jiang, Xun Jiao, X. Sharon Hu and Wanli Chang, "Fixed-Priority Scheduling and Controller Co-Design for Time-Sensitive Networks", International Conference On Computer Aided Design (**ICCAD**), 2020

C19 Dongning Ma, Xunzhao Yin, Michael Niemier, X. Sharon Hu, Xun Jiao, "AxR-NN: Approximate Computation Reuse for Energy-Efficient Convolutional Neural Networks", ACM Great Lakes Symposium on VLSI (**GLSVLSI**), Beijing, China, 2020.

C18 Dongning Ma, Xun Jiao, "A Machine Learning-based Error Model of Voltage-Scaled Circuits", IEEE/IFIP International Conference on Dependable Systems and Networks (**DSN**), 2020.

C17 Dongning Ma, Xun Jiao, "An Input-aware Learning-based Error Model of Voltage-Scaled Functional Units", IEEE Workshop on Silicon Errors in Logic – System Effects (**SELSE**), 2020. ***Best Paper Award***.

C16 Zhengxiong Luo, Feilong Zuo, Yu Jiang, Jian Gao, Xun Jiao, Jiaguang Sun, "Polar: Function Code Aware Fuzz Testing of ICS Protocol", IEEE/ACM International Conference on Embedded Software (**EMSOFT**), 2019. ***Best Paper Nomination***.

C15 Dongning Ma, Siyu Shen, Xun Jiao, "Work-in-Progress: DeVos: A Learning-based Delay Model of Voltage-Scaled Circuits", International Conference on Hardware/Software Codesign and System Synthesis (**CODES+ISSS**), 2019.

C14 Dongning Ma, Xun Jiao, "Detecting and Bypassing Trivial Computations in Convolutional Neural Networks", IEEE/ACM International Symposium on Nanoscale Architectures (**NANOARCH**), 2019

C13 Heyuan Shi, Runzhe Wang, Ying Fu, Mingzhe Wang, Xiaohai Shi, Xun Jiao, Houbing Song, Yu Jiang, Jiaguang Sun, "Industry Practice of Coverage-guided Enterprise Linux Kernel Fuzzing", ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE**), 2019

C12 Yu Jiang, Mingzhe Wang, Xun Jiao, Houbing Song, Hui Kong, Rui Wang, Yongxin Liu, Jian Wang, Jiaguang Sun, "Uncertainty Theory Based Reliability-Centric Cyber-Physical System Design", Proc. IEEE International Conference on Cyber Physical and Social Computing (**CPSCom**), 2019. ***Best Paper Award***.

C11 Yuanliang Chen, Yu Jiang, Fuchen Ma, Jie Liang, Mingzhe Wang, Chijin Zhou, Xun Jiao, Zuo Su, "EnFuzz: Ensemble Fuzzing with Seed Synchronization among Diverse Fuzzers", Proc. USENIX Security Symposium (**USENIX Security**), 2019.

C10 Dongning Ma, Xun Jiao, "Energy Efficient GPU Applications Through Computation Skip", Proc. IEEE International Conference on Embedded Software and Systems (**ICESS**), 2019.

C9 Mingzhe Wang, Jie Liang, Yuanliang Chen, Yu Jiang, Xun Jiao, Han Liu, Xibin Zhao, Jiaguang Sun, "SAFL: increasing and accelerating testing coverage with symbolic execution and guided fuzzing", Proc. International Conference on Software Engineering (**ICSE**), 2018.

C8 Xun Jiao, Vahideh Akhlaghi, Yu Jiang, and Rajesh K. Gupta, "Energy-Efficient Neural Networks using Approximate Computation Reuse", Proc. IEEE/ACM Design, Automation, and Test in Europe (**DATE**), 2018.

C7 Xun Jiao, Mulong Luo, Jeng-Hau Lin, and Rajesh K. Gupta, "An Assessment of Vulnerability of Hardware Neural Networks to Dynamic Voltage and Temperature Variations", Proc. IEEE/ACM International Conference on Computer-Aided Design (**ICCAD**), 2017.

C6 Xun Jiao, Yu Jiang, Abbas Rahimi, and Rajesh K. Gupta, "SLoT: A Supervised Learning Model to Predict Dynamic Timing Errors of Functional Units", Proc. IEEE/ACM Design, Automation, and Test in Europe (**DATE**), 2017.

C5 Xun Jiao, Vincent Camus, Mattia Cacciotti, Yu Jiang, Christian Enz, and Rajesh K. Gupta, "Combining Structural and Timing Error in Overclocked Inexact Speculative Adders", Proc. IEEE/ACM Design, Automation, and Test in Europe (**DATE**), 2017.

C4 Xun Jiao, Yu Jiang, Abbas Rahimi, and Rajesh K. Gupta, "WILD: A Workload-Based Learning Model to Predict Dynamic Delay of Functional Units", Proc. IEEE International Conference on Computer Design (**ICCD**), 2016.

C3 Xun Jiao, Abbas Rahimi, Balakrishnan Narayanaswamy, Hamed Fatemi, Jose Pineda de Gyvez, and Rajesh K. Gupta, "Supervised Learning Based Model for Predicting Variability-induced Timing Errors", Proc. IEEE International NEW Circuits And Systems conference (**NEWCAS**), 2015.

C2 Yu Jiang, Hehua Zhang, Xun Jiao, Xiaoyu Song, William N. N. Hung, Ming Gu, Jiaguang Sun, "Uncertain Model and Algorithm for Hardware/Software Partitioning", Proc. IEEE Computer Society Annual Symposium on VLSI (**ISVLSI**), 2012.

C1 Hehua Zhang, Yu Jiang, Xun Jiao, Xiaoyu Song, William N. N. Hung, Ming Gu, "Reliability Analysis of PLC Systems by Bayesian Network", Proc. International Conference on Software Security and Reliability (**SERE**) 2012.

Research Grants

Principal Investigator (PI): Collaborative Research: Machine Learning-assisted Modeling and Design of Approximate Computing with Generalizability and Interpretability
National Science Foundation (NSF) 2022-2025

Co-Principal Investigator (co-PI): Collaborative Research: SCH: Assessment of Cognitive Decline using Multimodal Neuroimaging with Embedded Artificial Intelligence
National Institute of Health (NIH) 2022-2026

Co-Principal Investigator (co-PI): CAS-Climate: CDS&E: Facilitating Sustainable and Fair Transformation of GSI through AI
National Science Foundation (NSF) 2022-2025

Principal Investigator (PI): Collaborative Research: PPoSS: Planning: S3-IoT: Design and Deployment of Scalable, Secure, and Smart Mission-Critical IoT Systems
National Science Foundation (NSF) 2020-2022

Principal Investigator (PI): Machine Learning-based RF Signal Detection and Classification
L3Harris Technologies 2020-2021

Invited Talks

- 2023, University of Notre Dame: "Robust Computing Against Unreliable Hardware"
- 2023, Peking University: "Robust Computing Against Unreliable Hardware"
- 2023, Institute of Computing Technology, CAS: "Robust Computing Against Unreliable Hardware"
- 2023, HKUST-GZ: "Robust Computing Against Unreliable Hardware"

- 2022, Meta Platforms: "Robust Computing Against Uncertain Operating Conditions and Data Workload"
- 2022, Tsinghua University: "Robust Computing Against Uncertain Operating Conditions and Data Workload"
- 2021, UC San Diego: "Adversarial Behavior of HDC and Applications of HDC in Drug Discovery and Anomaly Detection"
- 2021, Temple University: "Towards Robust Computing Against Uncertain Operating Conditions and Adversarial Data: from Hardware to AI"
- **2020, U.S. Congressional House Energy and Commerce Committee: "Predictive Analysis of Blockchain-based COVID-19 Contact Tracing"**
- 2019, DAC DACPS Workshop, Las Vegas: "Approximate Computing for the Internet of Things: from Circuits to Applications"
- 2018, SUNY Binghamton: "Improved Timing Error Resilience of Computing System using Cross-layer Optimizations "
- 2018, Villanova University: "Improved Timing Error Resilience of Computing System using Cross-layer Optimizations "
- 2018, Rochester Institute of Technology: "Improved Timing Error Resilience of Computing System using Cross-layer Optimizations "
- 2018, University of Kansas: "Improved Timing Error Resilience of Computing System using Cross-layer Optimizations "

PROFESSIONAL SERVICES

Funding Agency

- National Science Foundation (NSF) Panelist (2021, 2023)
- Department of Energy (DoE) Reviewer (2022)

Editorial Board

- Associate Editor: IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**) (2018 - present)
- Associate Editor: ACM SIGDA Newsletter "What is Column" (2019 - present)
- Lead Guest editor: Special issue on "Brain-Inspired Hyperdimensional Computing: Algorithms, Models, and Architectures" on Frontiers in Neuroscience - Neuromorphic Engineering (2021 - 2022)
- Guest Editor: Special issue on Dependable Cyber Physical Systems in the Journal of Systems Architecture (JSA) (2019)

Conference Program Committee

- [**DAC 2020 - 2022, Track Co-Chair**] IEEE/ACM Design Automation Conference
- [**ICCAD 2022 - 2023**] ACM/IEEE International Conference on Computer-Aided Design
- [**ASP-DAC 2022**] ACM/IEEE Asia-Pacific Design Automation Conference
- [**ISVLSI 2022 - 2023**] IEEE Computer Society Annual Symposium on VLSI
- [**GLSVLSI 2020**] ACM Great Lakes Symposium on VLSI
- [**LCTES 2019**] International Conference on Languages Compilers, Tools and Theory of Embedded Systems
- [**ICESS 2019-2021**] IEEE International Conference on Embedded Software and Systems
- [**COINS 2019**] IEEE International Conference on Omni-layer Intelligent systems

Conference Organization Committee

- **[DACPS 2023, General Chair]** The 6^{th} International Workshop on Design Automation for CPS
- **[ESWEEK 2023, Website Chair]** ACM Embedded Systems Weeks

Technical Reviewer
- IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)
- IEEE Design & Test
- IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)
- IEEE Transactions on VLSI Systems (TVLSI)
- ACM Transactions on Cyber-physical Systems (TCPS)
- Future Generation Computer Systems (FGCS)
- IET Cyber-Physical Systems: Theory & Applications
- IEEE Transactions on Industrial Informatics (TII)

Media
- 2023 Quanta Magazine: A New Approach to Computation Reimagines Artificial Intelligence
- 2021 Digital Engineering Magazine: The Coming of Age of AI and Machine Learning in Design
- 2020 Zippia: Computer Scientist Trends: Experts Weigh in on What To Expect in 2020
- 2020 Villanova CoE News: ECE Faculty Lead Blockchain Project to Track Electronic Medical Records in Response to COVID-19

Advised Students
Ph.D. Students
- Dongning Ma (Since Spring 2019)
  - DAC Richard Newton Young Fellow 2020, 2021
  - DAC Young Fellow Program Best 2-Minute Research Video Award
  - 20+ publications in journals and conferences (TCAD, DAC, DATE, etc)
- Ruixuan Wang (Since Spring 2019)
  - DAC Richard Newton Young Fellow 2021
  - 8 publications in conferences (DAC, DATE, RTAS)
- Sizhe Zhang (Since Spring 2019)
  - DAC Richard Newton Young Fellow 2021
  - 7 publications in conferences (ICCAD, ASAP, DATE)
- Wengying Wen (Since Fall 2023)

M.S. Students
- Mauro Sanchirico III (2019 - 2021)
  - **College of Engineering Outstanding Graduate Student Award** (only 1 given annually)
  - Now a Research Manager at Lockheed Martin
  - 1 publication in journal (IEEE Trans. on Neural Networks and Learning Systems)
- Lauren Scalice (Since Summer 2021)
- Sean Lane (Since Summer 2021)
- Bikal Lamichhane (Since Fall 2019)
  - Graduate Summer Research Fellowship at Villanova Computing Science Department

  - 2 publications at conference (ISVLSI)
  - Now at Paypal

Undergraduate Students

- Rahul Thapa (Since Fall 2019)
  - **Knight-Hennessy Scholarship from Stanford University** (one of 83 recipients globally)
  - 4 publications in conferences (DATE, BIBM, ISVLSI)
  - Now a Ph.D. student at Stanford University
- Caroline Maclaren (Since Summer 2020)
  - **Fulbright Scholarship** (continuing energy-efficient ML research in Norway)
- Kennedy Cornish (Since Spring 2021)
  - **Clare Boothe Luce Engineering Scholarship** (Support Female STEM students)
- Raymond Ogunjimi (Summer 2019)
  - **Hoffman Trailblazer Summer Research Fellowship** (Support First-Generation College students)
  - Now at Qualcomm
- Xingjian Wang (Summer 2019)
  - Villanova Undergraduate Research Fellows (VURF)
  - 1 publication in conference (DATE)
  - Now a M.S. student at U Penn
- Duncan Smith (Summer 2021)
  - Villanova Undergraduate Research Fellows (VURF)
- Oluwasola Dugbo (Spring 2021)
  - Villanova Match Research Program for First Year Students
- Andrew Osburn (Spring 2020)
  - Villanova Match Research Program for First Year Students
- Shenda Huang (Spring 2019)
  - Villanova Match Research Program for First Year Students
- Elyse Spinelli, Kevin Zachary, Kefan Han, Hongbo Sun (Capstone Team for 2020-2021)
  - **Brian Anderson Award**: Exploring Hyperdimensional Computing-based Artificial Intelligence
- Ian Birn, Caroline Maclaren, Benjamin Lucas, Andrew Osburn (Summer 2020)
  - L3Harris Innovation Project: NeuroLanguage: Brain-Inspired Computing for Language Recognition)
  - All four students interned at L3Harris afterawards
- Siyu Shen (2018 - 2019)
  - B.S. at Boston University, M.S. at Brown University
  - 1 publication in conference (Codes + ISSS)
  - Now data scientist at Visa Inc.
- Hongbo Sun (2020 - 2021)
  - Now M.S. student at CMU
  - Intern at Meta