# Yeonho Jeong

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## PROFESSIONAL ACADEMIC/INDUSTRIAL EXPERIENCE

- Assistant Professor, **University of Rhode Island**, RI, USA, 2020 − Present
- Postdoctoral Fellow, **University of Colorado Denver**, CO, USA, 2018 − 2020
- Senior Research Engineer, **Solu-M**, South Korea, 2015 − 2018
- Research Engineer, **Samsung Electro-Mechanics**, South Korea, 2008 – 2015

## EDUCATION

- **KAIST**, Ph.D. in Electrical Engineering, 2018

## HONORS AND AWARDS

- **IEEE Senior Member**, Aug. 2023.
- **Nominated for the Best Paper Award**, IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP). 2023.
- **Best Paper Award,** *IEEE Transportation Electrification Conference*, 2016.

## JOURNAL PUBLICATIONS

***Undergraduate and graduate students/post-docs/visiting scholars advised and co-advised.***

[1] M. -H. Park, ***X. Zhang***, **Y. Jeong** and G. -W. Moon, "A High Efficiency Boost Pre-regulator Merging with an Asymmetric LLC Standby Converter in DC Power Distribution System for Data Center," in *IEEE Transactions on Power Electron.,* vol. 39, no. 8, Aug. 2024.

[2] S. Kim, **Y. Jeong**, and J. W. Nam, "Solving Optimal Electric Vehicle Charger Deployment Problem," *Applied Sciences*, Vol. 14, no. 12: 5092.

[3] K. W. Kim, M. Y. Kim, J. I. Kang, and **Y. Jeong**, "High-Efficiency Multi-Output LLC Resonant Converter with Multi-Winding Transformer and Cost-Effective Analog Control Circuit," *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, vol. 4, no. 4, pp. 1034-1044, Oct. 2023.

[4] ***Y. G. Kwak***, **Y. Jeong**, and ***B. H. Lee***, "Port Configuration Method of Three-Switch Converter for High-voltage Gain in Hybrid UAVs Applications," *Journal of Electrical Engineering & Technology*, vol. 19, pp. 463-472, June 2023.

[5] ***B. Babaiahgari***, **Y. Jeong**, and J. D. Park, "Dynamic Control of Region of Attraction using Variable Inductor for Stabilizing DC Microgrids with Constant Power Loads," *IEEE Trans. Ind. Electron*., vol. 68, no. 10, pp. 10218-10228, Oct. 2021.

[6] *K. W. Kim*, **Y. Jeong**, J. S. Kim, and G. W. Moon, "Low Common Mode Noise Full-Bridge LLC Resonant Converter with Balanced Resonant Tank," *IEEE Trans. Power Electron*., vol. 36, no. 4, Apr. 2021.

[7] *K. W. Kim*, **Y. Jeong**, J. S. Kim, and G. W. Moon, "Low Common-Mode Noise LLC Resonant Converter with Static-Point-Connected Transformer," *IEEE Trans. Power Electron*., vol. 36, no. 1, Jan. 2021.

[8] **Y. Jeong**, M. S. Lee, J. D. Park, J. K. Kim, and Ronal A. L. Rorrer, "Hold-up Time Compensation Circuit of Half-Bridge LLC Resonant Converter for High Light-load Efficiency," *IEEE Trans. Power Electron*., vol. 35, no. 12, pp. 13126-13135, Dec. 2020.

[9] *M. H. Park*, **Y. Jeong**, R. A. L. Rorrer, D. Choi, and G. W. Moon, "Hold-up Time Extension Method for LLC Resonant Converter by Detecting Operation Region," *IEEE Trans. Power Electron*., vol. 35, no. 10, pp. 9949-9952, Oct. 2020.

[10] **Y. Jeong**, M. H. Park, and G. W. Moon, "High Efficiency Zero-Voltage-Switching Totem-pole Bridgeless Rectifier with Integrated Inrush Current Limiter Circuit," *IEEE Trans. Ind. Electron*. vol. 67, no. 9, pp. 7421-7429, Sep. 2020.

***(Before joining URI, Sep. 2020)***

[11] *C. Y. Lim*, **Y. Jeong**, and G. W. Moon, "Half-Bridge Integrated Phase-Shifted Full-Bridge Converter With High Efficiency Using Center-Tapped Clamp Circuit for Battery Charging Systems in Electric Vehicles," *IEEE Trans. Power Electron*. vol. 35, no. 5, pp. 4934-4945, May. 2020.

[12] **Y. Jeong**, J. D. Park, and G. W. Moon, "An Interleaved Active-Clamp Forward Converter Modified for Reduced Primary Conduction Loss without Additional Components," *IEEE Trans. Power Electron*., vol. 35, no. 1, pp. 121-130, Jan. 2020.

[13] *M. H. Park*, J. I. Baek, **Y. Jeong**, and G. W. Moon, "An Interleaved Totem-pole Bridgeless Boost

PFC Converter with Soft-Switching Capability Adopting Phase-Shifting Control," *IEEE Trans. Power Electron*., vol. 34, no. 11, pp. 10610-10618, Nov. 2019.

[14] *C. Y. Lim*, **Y. Jeong**, and G. W. Moon, "Phase-Shifted Full-Bridge DC-DC Converter With High Efficiency and High Power Density Using Center-Tapped Clamp Circuit for Battery Charging in Electric Vehicles," *IEEE Trans. Power Electron*., vol. 34, no. 11, pp. 10945-10959, Nov. 2019.

[15] K. W. Kim, H. S. Youn, J. I. Baek, **Y. Jeong**, and G. W. Moon, "Analysis on Synchronous Rectifier Control to Improve Regulation Capability of High-Frequency LLC Resonant Converter," *IEEE Trans. Power Electron.*, vol. 33, no. 8, pp. 7252-7259, Aug. 2018.

[16] **Y. Jeong**, J. K. Kim, and G. W. Moon, "A Bridgeless Dual Boost Rectifier With Soft-Switching Capability and Minimized Additional Conduction Loss," *IEEE Trans. Ind. Electron.*, vol. 65, no. 3, pp. 2226-2233, Mar. 2018.

[17] **Y. Jeong**, J. K. Kim, J. B. Lee, and G. W. Moon, "An Asymmetric Half-bridge Resonant Converter Having a Reduced Conduction Loss for DC/DC Power Applications With a Wide Range of Low Input Voltage," *IEEE Trans. Power Electron.*, vol. 32, no. 10, pp. 7795-7804, Oct. 2017.

## CONFERENCE PUBLICATIONS

***Undergraduate and graduate students/post-docs/visiting scholars advised and co-advised.***

[1] ***C. Kim, S. Kowalewski,*** S. Dey, and **Y. Jeong**, "High-Precision Modeling and Measurement of Core Temperature in Lithium-Ion Battery Cells," *in proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, 2025.

[2] ***Y. Kim***, Han-Shin Youn, and **Y. Jeong**, "Machine Learning (ML)-Based Fault Detection Strategy for Power Switches in Electric Mobility," *in proc. IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED)*, Dallas, TX, USA, 2025.

[3] ***X. Zhang*** and **Y. Jeong**, "Design and Modeling of Multi-purpose Control System in a Hybrid Converter Considering Coupling Effect," *in proc. IEEE Energy Conversion Congress and Exposition (ECCE)*, Phoenix, AZ, Oct. 2024.

[4] S. Kim, **Y. Jeong**, and J. -W. Nam, "Optimizing EV Chargers Location via Integer Programming," 2024 IEEE Transportation Electrification Conference and Expo (ITEC), Chicago, IL, USA, 2024, pp. 1-7.

[5] *M. M. N. Alzyod*, A. T. Al-Awami, **Y. Jeong**, and S. Kim, "A Multi-Phase Energy Management System for Hybrid Fuel Cell Drones," 2024 IEEE Transportation Electrification Conference and Expo (ITEC), Chicago, IL, USA, 2024, pp. 1-6.

[6] ***X. Zhang***, M. Y. Kim, J. I. Kang and **Y. Jeong**, "A Scalable Multi-input Hybrid Converter for Energy Management Control in Hybrid Energy Systems Empowering Electric Mobility," *in proc. IEEE Energy Conversion Congress and Exposition (ECCE),* 2023.

[7] ***X. Zhang***, K. W. Kim, M. Y. Kim, J. I. Kang, and **Y. Jeong**, "A New Multi-Output Structure with CRM Boost PFC Converter," *in proc*. *IEEE Energy Conversion Congress and Exposition (ECCE),* 2023.

[8] *Z. Xu*, M. Yu, Q. Yang, **Y. Jeong**, J. Cai and T. Wei, "A Novel FPGA-Based Circuit Simulator for Accelerating Reinforcement Learning-Based Design of Power Converters," *in proc*. 2023 IEEE 34th International Conference on Application-specific Systems, Architectures and Processors (ASAP), 2023.

[9] ***S. Thurber***, J. Baek, and **Y. Jeong**, "An Auxiliary Circuit with a Flexible LC Resonant Tank for High-Efficiency and Low-Cost Totem-Pole Boost Bridgeless Power-Factor Correction Converter," in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2023.

[10] ***X. Zhang***, R. A. L. Rorrer, and **Y. Jeong**, "A Novel Digital Energy Management Control Strategy of a Fully Active Hybrid Converter for Unmanned Aerial Vehicle Applications," in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2023.

[11] *Z. Xu*, M. Yu, Q. Yang, **Y. Jeong**, and T. Wei, "A Novel FPGA Simulator Accelerating Reinforcement Learning-Based Design of Power Converters," *Proceedings of the 2023 ACM/SIGDA International Symposium on Field Programmable Gate Arrays*, 2023.

[12] *Z. Xu*, ***X. Zhang***, T. Wei, K. W. Kim and **Y. Jeong**, "An FPGA-based Power Converter Simulation Accelerator Towards Highly Time-Efficient Machine Learning-Aided Design Methodology," *IEEE Energy Conversion Congress & Exposition (ECCE)*, 2022.

[13] J. Y. Kim, **Y. Jeong**, and J. K. Kim, "Double-Voltage Charger for On-Board Charger With 800 V Battery," *The ICT-Future Vehicle session at ICNGC 2022*, 2022.

[14] ***X. Zhang***, K. W. Kim, and **Y. Jeong**, "Low Cost and Small Component Count Hybrid Converter with Energy Management Control for Unmanned Aerial Vehicle Applications," in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2022.

[15] K. W. Kim, **Y. Jeong**, M. Y. Kim, and J. I. Kang, "High Efficiency Dual-Output LLC Resonant Converter with Synchronous Rectifier Control," in *Proc. IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2022.

[16] J. S. Choi, ***N. Lee***, Y. -J. Cheon, S. W. Cho, H. -W. Kim, J. Koo, J. Choi, **Y. Jeong**, and T. Chung, "A Flat Architectural Wall Approach to Electrical Integration and Test for GK2A and GK2B," in

*Proc. IEEE Aerospace Conference*, 2022.

[17] S. H. Lee, **Y. Jeong**, and J. K. Kim, "Integrated DC/DC converter for Reducing Voltage Stress and DC Offset Current of Transformer," in *Proc. ICT-Future Vehicle Workshop 2021*, 2021.

***(Before joining URI, Sep. 2020)***

[18] **Y. Jeong**, K. W. Kim, R. A. L. Rorrer, and J. D. Park, "A Novel Multi-Input and Single-Output DC/DC Converter for Small Unmanned Aerial Vehicle Applications," *in Proc. 2020 IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2020, pp. 1302-1308.

[19] ***S. H. Ko***, **Y. Jeong**, B. H. Lee, R. A. L. Rorrer, and J. D Park, "Asymmetric Dual Active Clamp Forward Converter with Phase-Shift Control for Small Conduction Loss," *in Proc. 2020 IEEE Applied Power Electronics Conference and Exposition (APEC)*, 2020, pp. 1866-1871.

[20] *B. Babaiahgari*, **Y. Jeong**, and J. D Park, "A Stability Enhancement Method for DC Microgrids with Constant Power Loads Using Variable Inductor," *in Proc. 2020 IEEE in Proc. Applied Power Electronics Conference and Exposition (APEC)*, 2020, pp. 2236-2240.

[21] *M. H. Park*, **Y. Jeong**, D. Choi, D. M. Kim, and G. W. Moon, "Hold-up Time Extension Method in LLC Converter by Detecting Operation Region," in *Proc. IEEE 9th International Power Electronics and Motion Control Conference (IPEMC2020-ECCE Asia)*, 2020, pp. 1706-1709.

[22] *K. W. Kim*, **Y. Jeong**, J. S. Kim, J. E. Park, and G. W. Moon, "Low Common-Mode Noise Structure Based on Half-Bridge LLC Converter for Medium and High Power Applications," in *Proc. IEEE 9th International Power Electronics and Motion Control Conference (IPEMC2020-ECCE Asia)*, 2020., pp. 640-643.

[23] *M. S. Lee*, C. Y. Lim, **Y. Jeong**, T. W. Kim, and G. W. Moon, "A High Efficiency Phase-Shift Full-Bridge Converter with Improved Clamping Circuit to Eliminate Oscillation for EV Battery Charger," in *Proc. IEEE 9th International Power Electronics and Motion Control Conference (IPEMC2020-ECCE Asia)*, 2020, pp. 1696-1701.

[24] **Y. Jeong**, R. A. L. Rorrer, B. H. Lee, and J. D. Park, "A Novel Control Scheme for High Efficiency Fuel Cell Power Systems in Parallel Structure," *in Proc. 2019 IEEE Energy Conversion Congress & Exposition (ECCE)*, 2019, pp. 940-946.

[25] *B. Babaiahgari*, **Y. Jeong**, and J. D Park, "Stability Analysis for Power Management Between Standalone DC Microgrids with Constant Power Loads," *in Proc. 2019 IEEE Energy Conversion Congress & Exposition (ECCE)*, 2019, pp. 5778-5782.

[26] *M. H. Ullah*, **Y. Jeong**, and J. D. Park, "Multi Agent-based Distributed Energy Arbitrage in Residential Distribution System," *in Proc. 2019 IEEE Power and Energy Society General Meeting (PESGM)*, 2019, pp. 1-5.

[27] *D. K. Kim*, **Y. Jeong**, J. E. Park, N. Y. Lee, and G. W. Moon, "Boost-Forward Integrated Converter

for High Power Density Spacecraft Applications," *in Proc. 2019 10th International Conference on Power Electronics and ECCE Asia*, 2019, pp. 1-6.

[28] *M. H. Park*, **Y. Jeong**, D. K. Kim, K. M. Kim, and G. W. Moon, "Pre-Regulating Boost Converter with Asymmetric Half-bridge LLC Converter for DC Server Power Supply," *in Proc. 2019 10th International Conference on Power Electronics and ECCE Asia*, 2019, pp. 1927-1932.

[29] *C. Y. Lim*, **Y. Jeong**, M. S. Lee, Y. D. Lee, and G. W. Moon, "High Efficient Hybrid Converter Using Center-tapped Clamp Circuit," *in Proc. 2019 10th International Conference on Power Electronics and ECCE Asia,* 2019, pp. 2067-2072.

[30] *D. K. Kim*, **Y. Jeong**, J. I. Baek, J. E. Park, C. W. Lim, G. W. Moon, "High Efficiency and High Power Density Weinberg Converter Reducing Conduction Loss and Output Current Ripple for Space Applications", *in Proc. Applied Power Electronics Conference and Exposition (APEC)*, 2019, 1583-1586.

[31] **Y. Jeong,** M. H. Park, K. W. Kim, B. H. Lee, and G. W. Moon, "High Voltage Gain Interleaved Active-Clamp Forward (IACF) Converter having Reduced Primary Conduction Loss," *in Proc. ECCE Asia,* 2018, pp. 838-844.

[32] K. W. Kim, J. I. Baek, **Y. Jeong,** K. M. Kim, and G. W. Moon, "Analysis for High-Frequency LLC Resonant Converter with Planar Transformer at Light-Load Condition," *in Proc. ECCE Asia,* 2018, pp. 2365-2369.

[33] C. Y. Lim, **Y. Jeong**, K. W. Kim, F. S. Kang, and G. W. Moon, "A High-Efficiency Power Supply from Magnetic Energy Harvesters," *in Proc. ECCE Asia,* 2018, pp. 2376-2379.

[34] **Y. Jeong,** J. K. Kim, and G. W. Moon, "Analysis on half-bridge LLC resonant converter by using variable inductance for high efficiency and power density server power supply," *in Proc. APEC,* 2017, pp. 170-177.

[35] **Y. Jeong,** J. S. Park, J. K. Kim, C. Y. Lim, M. H. Park, and G. W. Moon, "A zero-voltage-switching dual boost power factor correction rectifier with active clamp circuit having minimized conduction losses," *in Proc. ECCE Asia,* 2017, pp. 254-259.

[36] M. H. Park, C. O. Yeon, J. I. Baek, **Y. Jeong,** G. W. Moon, and J. S. Park, "An improved current compensation method for high PF and low THD in digital boost power factor corrector," *in Proc. ECCE Asia,* 2017, pp. 1065-1070.

[37] C. Y. Lim, **Y. Jeong,** and G. W. Moon, "Phase leading input capacitor compensation using variable inductor with high efficiency in a CRM boost PFC," *in Proc. ECCE Asia,* 2017, pp. 852-856.

[38] **Y. Jeong,** J. I. Baek, J. Choi, and G. W. Moon, "Half Bridge LLC Resonant Converter with High Voltage Gain for Single-Phase AC/DC Power System," *in Proc. ITEC Asia-Pacific,* 2016, pp. 573-578.

[39] D. K. Kim, **Y. Jeong,** C. Y. Lim, B. Kang, and G. W. Moon, "Bidirectional Bridgeless PFC with Reduced Input Current Distortion and Switching Loss Using Gate Skipping Technique," *in Proc.*

*ITEC Asia-Pacific*, 2017, pp. 579-583 – ***Best Paper Award***.

[40] **Y. Jeong,** J. B. Lee, C. O. Yeon, C. Y. Lim, J. K. Han, and G. W. Moon, "Asymmetric Half-Bridge Resonant Converter having a Reduced Conduction Loss for DC/DC Power Systems with a Low Input Voltage," *in Proc. ECCE Asia*, 2016, pp. 621-628.

[41] J. K. Han, J. I. Baek, C. E. Kim, **Y. Jeong,** C. O. Yeon, and G. W. Moon, "A simple THD improving method for CCM boost PFC converter under mixed conduction mode operation," *in Proc. ECCE Asia,* 2016, pp. 466-470.

[42] J. I. Baek, J. Choi, **Y. Jeong,** Y. Jang, G. W. Moon, and C. H. Yu, "Asymmetrical Half-Bridge Converter with Reduced DC-offset current in Transformer," *in Proc. ECCE Asia,* 2016, pp. 2249-2253.

[43] C. Y. Lim, J. H. Kim, **Y. Jeong,** D. K. Kim, H. S. Youn, and G. W. Moon, "A High Efficiency Critical Mode Boost PFC Using a Variable Inductor," in *Proc. ECCE Asia,* 2016, pp. 2792-2797.

[44] S. W. Jwa, J. B. Lee, **Y. Jeong,** K. W. Kim, G. W. Moon, and J. H. Kim, "Active Clamped Current-Fed Full-Bridge Integrating LLC Converter with Low Current and Voltage Stress," *in Proc. ECCE Asia,* 2016, pp. 3211-3217.

[45] J. -W. Kim, J. -P. Moon, H. -S. Youn, **Y. Jeong**, and G. -W. Moon, "Phase Leading Input Current Compensation in Digitally Controlled CRitical Mode Boost PFC," *in Proc. ECCE Asia*, 2015, pp. 2688-2695.

[46] **Y. Jeong**, J. W. Kim, C. Y. Lim, D. K. Kim, J.I. Baek, and G. W. Moon, "A Strategic Control Scheme of Phase-Shift Full Bridge Converter for Improving Light-load Efficiency in Server Power System," *in Proc. ECCE Asia, 2015*, pp. 488-494.

[47] D. K. Kim, C. O. Yeon, J. H. Kim, **Y. Jeong,** and G. W. Moon, "LLC Resonant Converter with High Voltage Gain Using Auxiliary LC Resonant Circuit," *in Proc. ECCE Asia,* 2015, pp. 1505-1512.

[48] **Y. Jeong**, C. E. Kim, S. Y. Cho, D. Y. Kim, and G. W. Moon, "Unexpected Bi-Directional Operation of Phase-Shift Full-Bridge Converter in Parallel Operation System," *in Proc. ECCE Asia*, 2013, pp. 999-1004.

## PATENTS

*U.S. Patents*

[1] J. N. Lee and **Y. Jeong**, POWER SUPPLY APPARATUS, US.9263953.B2, 2016

*Korean Patents*

[1] S. H. Won, D. M. Jang, B. J. Choi, J. W. Kim, **Y. Jeong**, T. W. Heo, D. J. Park, J. K. Lee, D. S. Kim, and D. J. Kim, SERIAL COMMUNICATION APPARATUS, 1012876740000, 2013. **(Registered)**

[2] B. J. Choi, D. M. Jang, J. W. Kim, **Y. Jeong**, T. W. Heo, S. H. Won, J. P. Kim, J. K. Lee, D. S.

Kim, and D. J. Kim, MEASURING ROTATION SPEED OF FAN USINGING COUNTER, 1012737500000, 2013. **(Registered)**

[3] **Y. Jeong**, C. E. Kim, J. P. Kim, and D. S. Kim, POWER SUPPLY WITH IMPROVED SYSTEM EFFICIENCY, 1011414160000, 2012. **(Registered)**

[4] D. M. Jang, B. J. Choi, J. W. Kim, **Y. Jeong**, T. W. Heo, S. H. Won, J. P. Kim, J. K. Lee, D. S. Kim, and D. J. Kim, MONITORING APPARATUS OF POWER, 1011385900000, 2012. **(Registered)**

[5] D. J. Kim, Y. Jeong, and D. S. Kim, POWER SUPPLY APPARATUS USING DUAL FEEDBACK CONTROL, 1012190010000, 2012. (**Extinguishment**)

## ACADEMIC GRANTS/INDUSTRIAL PROJECTS

### Total Funding: $1,462,483 / PI Share: $ 1,039,983

| Title/Sponsor | Total Budget (Share) | Budget Period |
|---|---|---|
| **Research on Design and Optimization of Single-Stage Point-of-Load (POL) Converters for Next-Generation Data Center Applications**<br>Infineon Technology | $60,000<br>(Sole-PI: $60,000) | Sep. 2025 – Aug. 2026<br>**Status: In Progress** |
| **2025-2025 Proposal Development Grant Awards: AI/ML-based Power Electronics Design Automation Framework Using Heterogeneous Computing**<br>University of Rhode Island (URI) Research Development | $20,000<br>(Sole-PI: $20,000) | July 2025 – Jun. 2026<br>**Status: Active** |
| **Mwani wa Jua: Innovative solar-powered seaweed drying to reduce poverty and improve nutrition in Tanzania**<br>Fish Innovation Lab<br>(United State Agency of International Development) | $500,000<br>(Co-PI: $ 77,500) | Jan. 2025 – Dec. 2027<br>**Status: Terminated** |
| **Hardware-Accelerated Machine Learning (ML)-aided Electronic Design Automation (EDA) for Integrated Power Electronics Building Block (iPEBB)**<br>Office of Naval Research (ONR) | $500,000<br>(Sole-PI: $ 500,000) | Aug. 2024 – July 2029<br>**Status: Active** |
| **Toward High Reliability: Novel Power Conversion System and Power Management Control for Water Monitoring Stations**<br>United States Geological Survey (USGS) | $248,395<br>(Sole-PI: $248,395) | Jan. 2024 – Dec. 2025<br>**Status: Active** |
| **SELECT: Real-time Simulator and Educational Laboratory for Advanced Electric Transportation Technologies**<br>Champlin Foundation | $134,088<br>(Primary-PI:<br>$ 134,088) | Jan. 2024 – Dec. 2024<br>**Status: Completed** |

### Student Support Fundings (Total: 14 students)

| Title/Sponsor | Awardees | Budget Period |
|---|---|---|
| **Undergraduate Research Assistant Fundings** | Royaljohn S. | 2025 – Present |

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|---|---|---|
| NDEP/NIUVT | Isaac Barbosa | 2024 – Present |
| | Helen Ly | 2025 – Present |
| | Gianni Smith | 2022 – 2025 |
| | Patrick Feliz | 2024 – 2025 |
| | William Lucas | 2025 |
| | Mason Jacob | 2023 – 2024 |
| | Zachary Weinstein | 2023 – 2024 |
| | Alex Amado | 2023 – 2024 |
| | Zach Chofay | 2022 – 2023 |
| | Edgar Ponce | 2022 – 2023 |
| **Undergraduate Research in Science and Engineering (URISE)**<br>College of Engineering | Sylas Wojciechowski<br>Sarah Eisenstein<br>William Lucas | Fall 2024<br>AY 2024-2025<br>AY 2024-2025 |
| **URI Enhancing Science, Technology, Engineering, and Math Education Diversity (URI ESTEEMED)**<br>National Institutes of Health (NIH) | Victoria Delacruz | 2024 - Present |

## Student Research Fundings (Total: 10 projects, $13,736)

| Title/Awardee/Sponsor | Total Budget (Share) | Budget Period |
|---|---|---|
| **IFEC 2025 Undergraduate Project Grant Proposa**<br>*William Lucas, Victoria Delacruz*<br>Office of Undergraduate Research and Innovation | $1,200 | 2025-2026 |
| **Arc Fault Detection with AI**<br>*Royaljohn Southammavong, Helen Ly, Isaac Barbosa*<br>Office of Undergraduate Research and Innovation | $1,400 | 2025-2026 |
| **Funding Proposal for URI Formula SAE Suspension Components**<br>*Isaiah Smith, Jacob Fernandes, and JD Mickel III*<br>Office of Undergraduate Research and Innovation | $1,400 | 2025-2026 |
| **Powertrain Design Team Engine Mounts and Fuel Cell**<br>*Gabriel Arabik, Nicholas O'Connor, Wilson El Hage*<br>Office of Undergraduate Research and Innovation | $1,400 | 2024-2025 |
| **Funding Proposal for URI Baja SAE Chassis**<br>*Mike Amighi, Paul Moura, Brianna Marandola*<br>Office of Undergraduate Research and Innovation | $1,400 | 2024-2025 |
| **Funding Proposal for URI Formula SAE Race Suspension Design Analysis**<br>*Ryan Hirsch, Andrew Harris, and Isaiah Smit*<br>Office of Undergraduate Research and Innovation | $1,400 | 2023-2024 |
| **URI Formula SAE Brake System Research**<br>*Joey Hook, Nicholas Caito, and Jeremy Herrera San*<br>Office of Undergraduate Research and Innovation | $1,400 | 2023-2024 |
| **URI Baja SAE Chassis Design Research Project**<br>*O'Malley Sherlock, Joshua Weiss, and Peter Hernandez*<br>Office of Undergraduate Research and Innovation | $1,400 | 2023-2024 |

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| **Telemetry and Control System for URI's First Formula SAE Style Car**<br>*Nathan Mendoza, Liam Crisfield, and Jack Petrarca*<br>Office of Undergraduate Research and Innovation | $1,400 | 2023-2024 |
| **Funding Proposal for IFEC 2023: Solid State Transformer (SST) Project**<br>*Nicholas Costick, Edgar Ponce Baldelamar, and Zachary Chofay*<br>Office of Undergraduate Research and Innovation | $1,336 | 2022-2023 |

## Previous Academic/Industry Projects

| Title/ Sponsor | Budget Period |
|---|---|
| **DARPA Subterranean (SubT) Challenge, Team MARBLE**<br>The Defense Advanced Research Projects Agency (DARPA) | 2018-2019 |
| **AC/DC server power systems with 800 W, 1.6 kW, and 2.0 kW**<br>Solu-M | 2015-2018 |
| **AC/DC and DC/DC server/network power systems with 300 W, 450 W, 700 W, 750 W, 1.6 kW, and 2.0 kW**<br>Samsung Electro-Mechanics | 2008-2015 |

# STUDENT ADVISING

- **Graduate Research Assistant**

| | | |
|---|---|---|
| Xueshen Zhang | PhD Program | Fall 2021 – Present |
| Chang-seok Kim | PhD Program | Spring 2025 – Present |
| Fuwei Li | PhD Program | Fall 2025 – Present |
| Sooan Pack | PhD Program | Fall 2025 – Present |
| Youngkeun Kim | PhD Program | Spring 2026 (Upcoming) |
| Elana Viola | Master's Program | Fall 2024 – Present |
| Shaun Thurber | Master's Program | Fall 2022 – Summer 2025 |

- **Undergraduate Research Assistant**

| | | |
|---|---|---|
| Royaljohn Southammavong | Senior | Summer 2025 – Present |
| Laila Ghazi | Senior | Summer 2025 – Present |
| Marc Delgado | Senior | Spring 2025 – Present |
| Isaac Barbosa | Junior | Spring 2025 – Present |
| Helen Ly | Sophomore | Spring 2025 – Present |
| Thomas Vrankar | | Summer 2025 |
| Joseph Rose | | Spring 2025 |
| Sarah Eisenstein | | Fall 2024 – Spring 2025 |
| William Lucas | | Fall 2024 – Spring 2025 |
| Kyle Ludwig | | Fall 2024 |
| Patrick Feliz | | Summer 2024 – May 2025 |
| Victoria Delacruz | | Spring 2024 – Spring 2025 |

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|---|---|
| Mason Jacob | Fall 2023 – May 2025 |
| Zachary Weinstein | Fall 2023 – Fall 2024 |
| Gianni Smith | Fall 2023 – May 2025 |
| Alex Amado | Spring 2023– May 2024 |
| Steven Kowalewski | Spring 2022– May 2024 |
| Edgar Ponce | Fall 2022– May 2023 |
| Zach Chofay | Fall 2022– May 2023 |
| Shaun Thurber | Spring 2022– May 2022 |
| Christopher Charron | Spring 2022– May 2022 |
| Nataly Karnaukh | Spring 2022– May 2022 |

- **Visiting Students**

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|---|---|---|
| Nahyun Lee | Dongduk Women's University | May 2025 – Present |
| Sooan Pack | Kyungpook National University | Dec. 2024 – Present |
| GyeongHyun Kwon | Incheon National University | Sep. 2024 – Feb. 2025 |
| Young-keun Kim | Incheon National University | Sep. 2024 – Feb. 2025 |
| Hailey Haesung Oh | Univ. of Southern California | May 2024 – Aug. 2024 |
| Woo-Seong Baek | Sogang University | March 2024 – June 2024 |
| Taewoo Kim | KAIST | March 2024 – May 2024 |
| Yun-gi Kwak | Hanbat National University | July 2022 – Aug. 2022 |

- **Faculty Advisor, URI Formula SAE Club**
  Plan to participate in 2025 SAE Competition 2021 – Present
- **Faculty Advisor, URI International Future Energy Challenge (IFEC) Team**
  2024-2025 IFEC Competition Participation (Semi-final)
  2023-2024 IFEC Competition Participation (Semi-final, 3rd Place) 2022 – Present
  2022-2023 IFEC Competition Participation (Semi-final)

- **Graduate Thesis Committee**

| | | |
|---|---|---|
| Emma Pensky | Master's degree (Industrial Eng.) | Summer 2025 |
| Ivy Ozuna | Master's degree (Industrial Eng.) | Spring 2025 |
| Jonathan Davila | Master's degree (Non-thesis) | Spring 2025 |
| Sungyoun Seo | Master's degree (Electrical Eng.) | Spring 2025 |
| Chandra Prasad Neupane | Ph.D. Degree (Physics) | Summer 2024 |
| Adelina Herbst | Master's degree (MISE) | Spring 2024 |
| Kevin Rivera | Ph.D. Degree (Chemical Eng.) | Fall 2022 |
| James Morris | Master's degree (Electrical Eng.) | Summer 2024 |
| Mehrsa Khaleghikarahodi | Ph.D. Degree (MISE) | Spring 2023 |
| Kevin Rivera | Master's degree (Electrical Eng.) | Fall 2022 |

## STUDENT AWARDS

| Title/Awardees/Sponsor | Total Budget | Budget Period |
|---|---|---|

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|---|---|---|
| **2025 The SMART Scholarship-for-Service Program**<br>*Gianni Smith*<br>Department of Defense | Full scholarship for PhD program | 2025-2029 |
| **SDEMPED 2025 Student Travel Support**<br>*Youngkeun Kim*<br>IEEE SDEMPED Conference Organization | $600 | Aug. 2025 |
| **2024-2025 IEEE PES Scholarship Plus**<br>*Aaron Phare*<br>IEEE Power & Energy Society | $2,000 | 2024-2025 |
| **Dean's Fellowship**<br>*Xueshen Zhang*<br>University of Rhode Island | Full scholarship for AY2024-2025 | 2024-2025 |
| **ECCE Student Travel Support**<br>*Xueshen Zhang*<br>IEEE ECCE Conference Organization | $750 | Oct. 2024 |
| **URI COE Graduate Travel Awards**<br>*Xueshen Zhang*<br>College of Engineering, University of Rhode Island | $400 | Oct. 2024 |
| **URI COE/ECBE Travel Awards**<br>*Alex Amado*<br>College of Engineering/ECBE, University of Rhode Island | $1,000 | March 2024 |
| **URI COE/ECBE Travel Awards**<br>*Sylas Wojciechowski*<br>College of Engineering/ECBE, University of Rhode Island | $1,000 | March 2024 |
| **Outstanding Teaching Assistant Award (1st Place)**<br>*Shaun Thurber*<br>ECBE Department, University of Rhode Island | - | May 2023 |
| **Outstanding Research Assistant Award (2nd Place)**<br>*Xueshen Zhang*<br>ECBE Department, University of Rhode Island | - | May 2023 |
| **URI COE Graduate Travel Awards**<br>*Xueshen Zhang*<br>College of Engineering, University of Rhode Island | $400 | March 2023 |
| **URI COE Graduate Travel Awards**<br>*Xueshen Zhang*<br>College of Engineering, University of Rhode Island | $400 | Oct. 2022 |
| **APEC Student Travel Support**<br>*Xueshen Zhang*<br>IEEE APEC Conference Organization | $1,000 | March 2022 |

## TEACHING

| **Course Number – Title** | **Semester / Year** |
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|---|---|---|
| ELE 449X – Power Electronics Design Lab | | Spring 2025 |
| ELE 446/556 – Introduction to Power Electronics | | Fall 2024 |
| ELE 449X – Power Electronics Design Lab | ***Developed*** | Spring 2024 |
| ELE 446/556 – Introduction to Power Electronics | ***In a Curriculum*** | Fall 2023 |
| ELE 322 – Electromagnetics I | | Spring 2023 |
| ELE 446X – Introduction to Power Electronics | | Fall 2022 |
| ELE 343 – Electronics II | | Spring 2022 |
| ELE 446X – Introduction to Power Electronics | ***Developed*** | Fall 2021 |
| ELE 343 – Electronics II | | Spring 2021 |

## ACADEMIC SERVICES

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| **URI Open House & Welcome Day**<br>*ELE Representatives* | 2025 |
| **Electrical Engineering Tenure-Track Faculty Search Committee**<br>*Search Committee Member* | 2024 |
| **URI Open House & Welcome Day**<br>*ELE Representatives* | 2024 |
| **Electrical Engineering Tenure-Track Faculty Search Committee**<br>*Search Committee Member* | 2023 |
| **URI Open House & Welcome Day**<br>*ELE Representatives* | 2023 |
| **URI Open House & Welcome Day**<br>*ELE Representatives* | 2022 |
| **Electrical Engineering Technician Search Committee**<br>*Search Committee Member* | 2021 |

## PROFESSIONAL SERVICE

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|---|---|
| **Technical Committee Member, IEEE Heterogeneous Integration Road Map – Chapter 10 Integrated Power Electronics Technical Working Group (Leading)**<br>*IEEE-EPS Power & Energy Technical Committee (P&E TC)* | July 2024 – Present |
| **Associate Editor,** *Journal of Power Electronics* | 2025 – Present |
| **Technical Committee Member,** *IEEE 2025 IEEE Electric Ship Technologies Symposium (ESTS)* | 2024 – Present |
| **Publication Chair,** *IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED) 2025* | 2024 – Present |
| **Technical Programming Committee,** *IEEE Workshop on Control and Modeling of Power Electronics (COMPEL 2025)* | June 2025 |
| **Technical Session Chair,** *IEEE Energy Conversion Congress and Exposition (ECCE)* | Oct. 2025 |
| **Track Chair,** *IEEE International Symposium on Diagnostics for Electric Machines,* | Aug. 2025 |

*Power Electronics and Drives (SDEMPED) 2025*

**Track Chair,** *IEEE 2025 IEEE Electric Ship Technologies Symposium (ESTS)* Aug. 2025

**Technical Session Chair,** *IEEE Energy Conversion Congress and Exposition (ECCE)* Nov. 2023

**Technical Session Chair,** *ICPE 2023 – IEEE ECCE Asia Conference* May 2023

**Technical Session Chair,** *IEEE Applied Power Electronics Conference (APEC)* March 2023

**Technical Session Chair,** *IEEE Energy Conversion Congress and Exposition (ECCE)* Nov. 2023

**NSF Panel Review (ENG/ECCS, GRFP)** 2023-2025

**Journal/Conference Reviewer**

- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Power Electronics
- IEEE Transactions on Energy Conversion
- IEEE Transactions on Industry Applications
- IEEE Transactions on Transportation Electrification
- IEEE Journal of Emerging and Selected Topics in Power Electronics
- IEEE Access
- KIPE Journal of Power Electronics
- IEEE Applied Power Electronics Conference (APEC)
- IEEE Energy Conversion Congress and Exposition
- IEEE Energy Conversion Congress and Exposition Asia
- IEEE Wireless Power Transfer Conference
- AIAA Propulsion & Energy Forum

***Chapter Secretary**, PELS IEEE Power Electronics Society (PELS) Boston Chapter* 2024 – Present

***Branch Director,** Korean Institute of Power Electronics (KIPE) – North America* 2023 – 2024

## INVITED SEMINARS/PRESENTATIONS

**Advanced Electronics/Power Electronics Circuits (Inviting Hanbat National University)** Kingston, RI

*University of Rhode Island* July 2025

**Enhanced Power Switch Modeling in Modified Nodal Analysis for Fast Circuit Simulation Using FPGA Accelerators** South Korea

*Korea Advanced Institute of Science and Technology (KAIST)* July 2025
*Hanbat National University*

**Hybrid Power Conversion Systems and Virtual Prototype Implementation for Multi-Source Applications** South Korea

*Konkuk University* June/July 2025
*Ulsan University*
*Jeonbuk University*

**Research on Simplified Hybrid Power Conversion Systems with Integrated Energy Management and Scalable Design for Small UAV** Storrs, CT

*The 1st Northeast Power Electronics Symposium* (NEPES 2024), UConn Nov. 2024

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| **Novel Power Conversion and Energy Management Control for Water Monitoring Systems** | Webinar |
| *NIC/NGWOS Research and Development Seminar* | Nov. 2024 |
| **Time-efficient Machine Learning (ML)-aided Electric Design Automation (EDA) for Power Electronics Building Block** | Cambridge, MA |
| *ONR PEPDS Program Review, MIT* | Nov. 2024 |
| **Technology Trends in Electronics Design Automation for Power Conversion Systems** | Webinar |
| *Korean Institute of Power Electronics (KIPE)* | Sep. 2024 |
| **Time-efficient Machine Learning (ML)-aided Electric Design Automation (EDA) for Power Electronics Building Block** | Ann Arbor, MI |
| *ONR Controls S&T Program Review, University of Michigan Ann Arbor* | Spe. 2024 |
| **Time-Efficient Machine Learning-aided Electric Design Automation for Power Conversion Systems** | Jinju, South Korea |
| *The 1st KIPE Electrification Workshop, Gyeong-sang National University* | Aug. 2024 |
| **Time-Efficient Machine Learning-aided Electric Design Automation for Power Conversion Systems** | South Korea |
| *Kunkuk University,*<br>*Incheon National University,*<br>*Inha National University,*<br>*Dankook University* | Aug. 2024 |
| **Time-Efficient Machine Learning-aided Electric Design Automation for Power Conversion Systems Enabled by FPGA Accelerators: A Fast Power Converter Auto Designer** | Webinar |
| *Hanbat National University* | July 2023 |
| **Time-Efficient Machine Learning-aided Electric Design Automation for Power Conversion Systems Enabled by FPGA Accelerators: A Fast Power Converter Auto Designer** | Webinar |
| *Ajou University* | July 2023 |
| **Future of Mobility** [Panelist] Future Science and Technology Session | Seoul, South Korea |
| *The 1st World Congress of Korean Scientists and Engineers* | July 2023 |
| **Time-Efficient Machine Learning-aided Electric Design Automation for Power Conversion Systems Enabled by FPGA Accelerators: A Fast Power Converter Auto Designer** | Chungju, South Korea |
| *Korea National University of Transportation* | May 2023 |
| **Time-Efficient Machine Learning-aided Electric Design Automation for Power Conversion Systems Enabled by FPGA Accelerators: A Fast Power Converter Auto Designer** | Jeonju, South Korea |
| *Jeonbuk National University*, Jeonju, South Korea, May 2023 | May 2023 |
| **High-Efficiency Topologies for Industrial Applications in Power Electronics** | Kingston, RI |
| *University of Rhode Island* | Feb. 2020 |
| **High-Efficiency Topologies for Industrial Applications in Power Electronics** | Dearborn, MI |
| *University of Michigan Dearborn* | Feb. 2020 |

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| **High-Efficiency Topologies for Industrial Applications in Power Electronics** | Bronx, NY |
| *Manhattan College* | Feb. 2020 |
| **Introduction of Power Electronics and Server Power Systems** | Denver, CO |
| *University of Colorado Denver* | Oct. 2018 |
| **State of the art for Server Power Systems** | Yongin, South Korea |
| *Myung-ji University* | Aug. 2018 |