

Electrical and Computer Engineering

POSTER SESSION, 8:30am to 12:00pm Alden Memorial Auditorium

Adaptive Beamforming for Anti-Jamming

Rachel Donati, Oly Holguin

Advisor: Bo Tang

AI Powered 3D Facial Generation for Robotic Interface

Michael Dugan, William Tyrrell

Advisor: Bo Tang

Automation of Photon Emission Analysis: Pipeline for Hardware Security

Spencer Harding, Keegan Kuhn, Scott West

Advisors: Fatemeh Ganji, Shahin Tajik

Autonomous Surface Vehicle for Shallow Water Bathymetry

Marcel Guzik, Michael Dodge, Ibraheim Ibraheim, Melissa Perry

Advisors: Donald Brown, Zane Weissman

Design and Test of a Transcutaneous Oxygen Sensor Prototype

John Lemieux (ECE & CS)

Advisor: Ulkuhan Guler

Design of a Hybrid Renewable Microgrid System for Remote Populations

Elie DeLaVille, Alexander Galvin,

Thomas Rua, Domenic Sena, Vincent Vu

Advisor: Gregory Noetscher

Design of a Wireless EMG/ECG Device with Applications in Myoelectric Prostheses Control

Emma Barnes (ECE/BME),

Madison Boutin (ECE/BME), Kimberly Huang,

Anastasii Likhanova (ECE/BME)

Advisors: Ted Clancy, Taimoor Afzal (BME)

Developing an Intelligent System for Maximizing Photovoltaic Array Output Power Based on Varying Environmental Conditions

Saketh Dinasarapu, Frank Parsons, Kyle Rabbitt, Micaela Tourtellot

Advisor: Gregory Noetscher

Developing Hybrid Renewable Solutions for Residential Living

Lexi Carim, Sage Curtis, Julia Colucci,

Fraser Milligan (ME)

Advisor: Pradeep Radhakrishnan (ME, RBE)

Sponsor: Matthew Jette

Development of an MRI-Compatible Mock Circulatory Loop

Jean-Luc Bourget, John Mahoney

Advisors: Sergey Makaroff, Zhenglun Wei (BME)

Sponsor: PracticePoint

Development of Secure CMOS Image Sensor

Hubert Liu (ECE/CS), Kelu Liu (ECE/CS),

Francesco Marrocco, Philip Miu, Yuran Xue (CS)

Advisors: Sakire Arslan Ay (CS), Suat Ay, Ibrahim Bozyel, Ulkuhan Guler

Sponsor: National Science Foundation

Digital Twin Apparatus

Ava Gaughan (ME), Dang K. Nguyen

Advisor: Zhu Mao (ME)

Enhancing Electrical Vehicle Efficiency Through Power Electronics

Nathan Cloutier

Advisor: Ziming Zhang

The Establishment of Green Meadow Elementary School, in Maynard, MA

Monica Doan, Kristina Meneses

Advisor: Greg Noetscher

FATE: A Fourier Accelerated Tensor Engine for Neural Networks

Jack Adiletta (ECE, DS)

Advisors: Ulkuhan Guler, Bashima Islam

Formula SAE Electric Racecar: 2024-2025

Eric Hughs-Baird (ECE,/CS), Liam Jennings (CS), Samantha LeBlanc (ME), Amanda Lota (ME), Pari Mandalapu (ME), Sean Obert (ME), Syrena Prytko, Steve Rosario (ME/RBE), Sage Ugras (ME)

Advisors: William Michalson (ECE, RBE, ME, CS),

Andre Rosario (RBE)

GaN-Based DC/DC Converter for Fuel Cell Applications

Dominic Brunetti, Eli Budde, John Clendenin, Bora Hurst, Sara Kelly, Vanessa Narciso

Advisor: Greg Noetscher

Sponsor: Honeywell

Hardware Accelerated Super Resolution

Diyar Aljabbari, Will Buchta (ECE/CS), Parker Langa, Parker Lavering (CS), Adam Spencer

Advisor: Patrick Schaumont

Isolated-String Electric Guitar Transducer

Samuel Forero Miranda, Rachel Turman

Advisors: V.J. Manzo (HA), Alexander M. Wyglinski

Measurement Techniques of High Quality Factor Micro Ring Resonators on Photonic Integrated Circuits

Joshua Andrade, Maria Bechwati,

Christelle El Bitar (PH)

Advisors: James Eakin (PH), Doug Petkie (PH)

SCApegoat: Expanding Side-Channel Analysis Research Through Open-Source Tools

Nathan Dynko (CS), Sharon Rose John Paul

Advisors: Fatemeh Ganji, Patrick Schaumont

Sound Source Localization System

Lucca Chantre (CS), Philip Heney (CS/RBE),

Drew Trust

Advisor: Bo Tang

Transdisciplinary Design of a Smart Insole for Regulating Shuffling Gait in Parkinson's Disease and Dementia with Lewy Bodies

Mithil Amin, Michael Gates,

Victoria Grasso (BUS)

Advisors: Xinming Huang, Elizabeth Lingo (BUS)

Uninterruptible Power Supply Design: Theoretical and Simulated Modeling of Buck and Boost Converters

Francisco Diaz, Daniel Lenshin

Advisor: Bo Tang

Sponsor: Schneider Electric