

Computer Science

John Carrotta, Justin Santiago-Wonoski, Sriram Sundararajan, Madelyn Veccia
Advisors: Melissa Kagen, Erin Solovey

POSTER SESSIONS

Innovation Studio, Second Floor

Session A: 10:00am to 12:00pm

EcoTarium Explorer: Increasing Accessibility at the Worcester EcoTarium

Joseph Fox, Owen McGinley, Dylan Olmsted, Dylan Phillips, Brandon Vuong
Advisor: Rodica Neamtu
Sponsor: Worcester EcoTarium

DraftKings Fantasy Sports Data Analytics

Abigail Albuquerque, Vagmi Bhagavathula, Kristin Lavoie, Owen Radcliffe, Eric Schuman
Advisors: Donald Brown (ECE), Randy Paffenroth (Math)
Sponsor: DraftKings

Machine Learning, Image Processing, and Transfer Learning for Handwritten Text Recognition

Matthew Haley, Liam Hall, Christopher Langevin, Cameron Norton, Harsh Patel, Elliot Trilling
Advisors: Oren Mangoubi (MA), Randy Paffenroth (MA)
Sponsor: Professor Gregory Noetscher, U.S. Army Natick Soldier Systems Center

Z3-Wellness: Evaluating and Improving a Sleep Wellness Application for College-Age Students

Sultan Adedeji, Camilo Escobar, Seungho Lee, Lucas Sicard, Jack Hanlon, Benjamin Bagley, Matthew Lacadie, Parker Van Ham, Mackenzie Pryor (DS), Justine Moy (DS)
Advisor: Carolina Ruiz

AutoOD 2.0: Elevating User Experience and Multi-User Functionality

Talia Andrews, Ishayu Das, Tristan Sharich, James Yi
Advisor: Elke Rundensteiner

Interactive Experience Design

FinTech Project B23 - Stride Funding - Building Stride Score App for Informed Education and Career Decisions

Pooja Kawatkar, Dang Nguyen, Kseniia Romanova
Advisors: Jim Ryan, Robert Sarnie, Wilson Wong
Sponsor: Stride Funding

App X Application Proof of Concept

William Doyle, Amitai Erfanian, Katelyn Tropeano
Advisors: Sarnie Robert, Wong William
Sponsor: Seni Hazan

Mining Graph Patterns in Software Development from Code Repositories

Ethan Falcao, Nur Fateemah, Alexander MacDonald, Jakob Simmons
Advisors: Fabricio Murai, Frank Zou (Math)

Waste Sorting Robot for Recycling

Valerie Childers, Dylan Hunt
Advisors: Berk Calli, Sarah Jane Wodin-Schwartz

Exploring Adaptive Time Delay in First Person Shooter Games

Benjamin Gelinias, Andrew Hariyanto, Trevor Ng, Sophia Silkaitis
Advisor: Mark Claypool

Various Design Projects in the ASSISTments Foundation

Neha Kuchipudi
Advisor: Neil Heffernan
Sponsor: ASSISTments

Rich Embedded Finance Solutions for Colleges and Students

Andrei Bornstein, Nikola Grozdani, Zach Newberg
Advisors: Robert Sarnie, Wilson Wong
Sponsor: Citizens Bank
Project Center: Fintech Project Center

Enhancing Skills Matching for Marginalized Groups

Sasha Daraskevich, Ben Erwin, Mikaela Milch, Nolan Willoughby
Advisors: Daniel Reichman, Andrew Trapp (BUS, DS), Marcela Vasconcellos _(DS)
Sponsor: Intrare

Clean Sweep

Austin Hyatt, Nelson Pires
Advisors: Farley Chery (IMGD), Rodney DuPlessis (IMGD), Gillian Smith, Karen Stewart (IMGD)

Implementing a New Beecology Project Web App Interface

William Dufault, Mattheus Faria, Steven Frisch, Colin Fyock
Advisors: Carolina Ruiz, Liz Ryder (BB)

FCAT - Testing Public APIs for Next Generation Platform

Aidan MacNevin, Drew Plunkett, Emre Sabaz
Advisors: Mehul Bhatia (ME), Michael O'Connor, Robert Sarnie (BS), Wilson Wong
Sponsor: Fidelity Center for Applied Technology
Project Center: FinTech Project Center

Designing for Productivity, Exploring the Cognitive Impact of Architectural Design

William Fallon, Jonathan Nguyen, Ethan Thompson
Advisors: Soroush Farzin, Ali Yousefi

Creating a Comprehensive Pipeline for Exploring Cultural Variance in Data Visualization

Joselin Barbosa, Katie Bowles, Vivian Reno
Advisors: Lane Harrison, Noelle Rakotondravony

Performance of HPC Systems

Karl Brzoska
Advisor: Shubbhi Taneja

How the Human Brain Makes Sense of Natural Scenes

Shivali Mani, Alison McNicholas, Jose Morales
Advisor: Ziming Zhang

Leveraging Product Analytics to Streamline Application Flows and Triple User Retention for Perr, a File-sharing Application

Justin Luce, Michael McInerney, Aidan Syrgak
Advisor: Chun-Kit Ngan
Sponsor: Overthrow Inc.

Designing an Interactive Interface for FACET: Personalized Explanations in XAI

Randy Huang, Belisha Genin, Jacob Reiss, Katharine Dion, Alexander Pietrick
Advisor: Elke Rundensteiner

Aiding in the Migration of the E-Trials Platform

Kristine Guan, Sharon Wu
Advisor: Neil Heffernan
Sponsor: _The ASSISTments Foundation

Predicting Students' Mental Health Using Fitbit Data

Allison Escott, Kyle Lusignan, Noah Pins, Olivia Raisbeck
Advisors: Shichao Liu, Oren Mangoubi, Elke Rundensteiner

An Examination of Share Buyback Program Execution

Robert Chiocchio
Advisors: Marcel Blais (MS), Randy Paffenroth, Stephan Sturm (MS)
Sponsor: Bern University of Applied Sciences
Project Center: Switzerland

FACET: Finding Actionable Explanations for Unwanted AI Predictions

Katharine Dion, Belisha Genin, Randy Huang, Alexander Pietrick, Jacob Reiss
Advisors: Dr. Elke Rundensteiner, Peter VanNostrand, Dennis Hofmann

Jitter Compensation for Cloud-based Game Streaming

Nicholas Heineman, Yu-Chi Liang, Aaron Nguyen, William Ryan
Advisor: Mark Claypool

Operation Breadcrumbs

Tate Donnelly, Nicholas Frangie, Jack McEvoy

Advisors: Adryen Gonzalez (IMGD), Ben Schneider (IMGD), Gillian Smith

Enhancing the Robustness of Deep Neural Networks

Alasdair Campbell, Jared Lasselle
Advisor: Yanhua Li

7Factor 2023-2024: AWS Analysis

Cameron Goodrich, Joey Rozman, Nathaniel Sadlier, Oliver Shulman, Dov Ushman
Advisor: Joshua Cuneo
Sponsor: 7Factor

Customizing Large Language Models for Automated Academic Advising at Universities

Ronit Banerjee, Kate Butziger, Fabrizio Filizzola, Matt Kiszla
Advisor: Xiangnan Kong

Robot Escape Room

Iain McEwen, Conner McKeivitt, Kaelin Panneton
Advisors: Berk Calli (RBE), Melissa Kagen (IMGD), Gillian Smith

Failed To Send

Evans Owusu, Carolyn Meyer
Advisors: Karen Stewart (IMGD), Gillian Smith

Predictors of Medically Significant Chronic Pain Response to Mindfulness-Based Treatment

Adeline Evans, Adina Palayoor
Advisors: Carolina Ruiz, Benjamin Nephew(BCB/BBT)

Session B: 1:00pm to 3:00pm

Isolation-Centric Operating Systems for the Enterprise

Annalisa Allan, Jacob Chlebowski, Quentin Hall, Zaq Humphrey, Charles Kneissl-Williams, Cole Ouellette, Mira Plante, Caleb Scopetski, Aidan Wech, Connor West, Edison Zhang
Advisors: Jun Dai, Craig Shue, Sherry Sun

Fine-Tuning Open-Source Large Language Models for Generating Math Explanations

Paul Godinez, Eli Hoffberg, Neena Xiang
Advisor: Neil Heffernan
Project Center: ASSISTments

Database Technology Comparisons and Exploration

Axel Luca, Ethan Pollack, Harrison Taylor
Advisors: Rodica Neamtu, Wilson Wong

Developing Reusable Robotic Code Library for Improving Quality of Controllers

Jair Meza, Austin Rebello, Brianna Sahagian
Advisor: George Heineman

Efficient Delivery of Geospatial Data for Web Visualization

Deepti Gosukonda, Nadav Konstantine, Nicholas Markou, Patrick Salisbury
Advisor: Lane Harrison
Sponsor: Tetra Tech

7Factor Staffing Tool #2

Matthew Adragna, Jackson Lundberg, Jordan Wecler
Advisor: Joshua Cuneo
Sponsor: 7Factor Software, LLC

Data Analytics/Visualization for Analyzing the Draft and Evaluation of Players in Professional Sports

Jacob Adamsky, Jinjia Ou, Engjell Ramadani
Advisor: Craig Wills

7Factor Staffing Tool One

Nicholas Borrello, Sean McNamara
Advisor: Joshua Cuneo
Sponsor: 7Factor

Improving QUIC Slow Start Behavior in Satellite Networks with SEARCH

Amber Cronin
Advisors: Mark Claypool, Alexander Wyglinski (ECE)
Sponsor: Viasat

Building a Platform for Data Visualization Learning

Joe Dobbelaar, Luke Foley, Ryker Germain, Matthew McAlarney
Advisor: Lane Harrison

ChordCraft: AI Chord Generator VST

Sameer Desai, Thomas Kneeland, Darren Kwee, Ilana Whittaker
Advisors: Scott Barton (HUA), Charles Roberts

ReVisit Study

Alvin Chen, Luke Gardone
Advisor: Harrison Lane

Mobile App for E-Waste Processors

Cortina Barbieri, Abigail Boaf, Abby Hoschouer, Madeline Mueeting, Alyssa Ogi
Advisors: Robert Krueger, Harrison Lane, Mahamadou Sagna

Creating a Survey Tool for Users of American Sign Language

Julia Albrecht, Juliana Porto, Jenna Tripoli
Advisor: Erin Solovey
Sponsor: National Science Foundation, ASL Education Center

Exploring Use Cases and Evaluating Tools for Web3 Technology

Jacob Byrnes, Michael Gatti, Jack Lynch, Kody Robinson, Eric Zhou
Advisor: Craig Wills

Zero-th Annual Martin Gardner Exploration Project: 2048

Ethan Catania, Tucker Raymond
Advisor: Michael Engling

Software Engineering Healthcare Application Framework

Joseph Cardarelli, Bryce Lukens, Ari Schechter, Mike Wilkinson, Ian Wright
Advisor: Wilson Wong

Developing a Brain-Computer Interface to Enhance Storytelling in Games with the Identification of Cognitive States

James Cao, Andrew Nguyen, Jagger Polvino
Advisors: Max Chen (IMGD), Gillian Smith, Erin Solovey

Authentication Mechanisms

Charles Anderson, Ian Grzembski, Caitlyn Puia, Daniel Onyema
Advisor: Craig Wills

Implementing Butterfly Data Visualization Tools for the Beecology Project

Joanna Hu, Bernhard Nordemann, Megan Sin, Aria Yan
Advisors: Carolina Ruiz, Elizabeth Ryder (BCB)

Voice Control of the HOPE Hand Exoskeleton for Individuals with Motor Impairments and Speech Aphasia

Connor Gaudette, Matthew McGourty, Allison Rozear, Keenan Segenchuk
Advisors: Christopher Nycz (RBE), Erin Solovey, Yunus Telliel, Haichong Zhang (BME/RBE)

Latency and Jitter Compensation for Cloud-based Game Streaming

Marek Garbaczonek, Jonathan Hsu, Mark Renzi
Advisor: Mark Claypool

RavenGuard MQP

Alex Marrinan
Advisor: Michael Engling

GoatConnect

Owen Lehane, John Mezzo, Isabella Pabon, Harry Rubin
Advisor: Rodica Neamtu

FinTech Project B23 - Creating A Minimum Viable Product for Worcester Red Sox's Enterprise Mobile Application

Mohamed Barry, Miguel Duran, David Rosenstein
Advisors: Marcel Blais (MA), Joshua Cuneo, Sara Saberi (WBS), Robert Sarnie (WBS), Wilson Wong
Sponsor: Worcester Red Sox
Project Center: FinTech Project Center

Automated Design Tool for Arduino Circuits

Gabriel Buziba, Yangyang Jin, Andres Negron, Casey Wohlers
Advisors: David Brown, Pradeep Radhakrishnan (ME)

PMKS+: An Application for Generating and Analyzing Planar Linkages

Nicole Burgess, Robert Eskridge, Tyler Evans
Advisors: David Brown, Pradeep Radhakrishnan

SCApeGoat: Side-Channel Analysis Library

Samuel Karkache, Trey Marcantonio
Advisors: Fatemeh Ganji (ECE), Patrick
Schaumont

The Statistics of Subsequences

Chase Miller, Andrew Salls, Duncan Soiffer
Advisors: George Heineman, Daniel Reichman,
Gabor Sarkozy

**Radar and AI-based Soil Moisture Prediction
for Efficient Farm Irrigation**

Allen Cheung, Ruba Khan
Advisors: Oren Mangoubi, Seyed Zekavat (DS)

**Automated Wearable ECG Data Editing with
DNN**

Vincenza Burdulis, Jacob Nguyen, Daniel
Sardak
Advisor: Bashima Islam (ECE)

**Dynamical Systems Approaches for Deep
Learning**

Neil Kale
Advisor: Randy Paffenroth

**Assisting Learning Through Student Mastery
Metrics**

Noah Goodman, Justin Weintraub
Advisor: Neil Heffernan

**Enriching Visually-Impaired Visitors
Experiences at the Worcester Art Museum**

Timothy Connors, Theo Coppola, Randolph
Dyer
Advisor: Rodica Neamtu
Sponsor: Worcester Art Museum

**soloPlane: Modular Electronic Mallet
Instrument**

William Merry, Robert Oleynick, Nathaniel
Reppucci
Advisors: Scott Barton (CS, RBE), Patrick
Schaumont (ECE)

Social Robot for Interactive Play

Joseph Baliestiero (RBE), Jayson Caissie,
Kaley Du, Megan Jacques (RBE), Chloe Plasse,
K. "V" Valery (RBE)
Advisors: Rose Bohrer, Jane Li (RBE)