Computer Science

POSTER SESSIONS
Innovation Studio, Second Floor
Session A: 10:00 am to 12:00 pm

From Gaming Miniapp APIs to Peer-to-Peer Payment Applications: Persistent Transaction Integrity Vulnerabilities
Zachary Bastek, Grant Kortfelt, Szymon Mamro, Dakota Wellerbrady
Advisor: Jun Dai

Mind in the Machine: Enabling LLM Agents with Theory of Mind
Daniel Baranov, Jacob Bergeron, Benjamin Marsh, Noah Newton, Eloisa Salcedo-Marx
Advisor: Raha Moraffah

Teaching Functional Programming in High School with the Wipple Programming Language
Wilson Gramer
Advisor: Gillian Smith, Thomas Noviello (PH), Jillian DiBonaventura (EDU)

Simulation of High-Density Crowds: Flow Field-Guided Agent-Based Modeling
Benjamin Forelli, Stephen Stardellis, Benjamin Wiseman
Advisor: Jennifer Mortensen

NVIDIA DRIVE Security: Automating Cryptographic Validation
Daniel Gorbunov, Isabel Cruz Rivera, John Diamond
Advisor: Lane Harrison
Sponsor: NVIDIA
Project Center: Silicon Valley, CA

Distributed Quantum Computing
Peter Cancilla
Advisor: Tian Guo
Sponsor: National Science Foundation

7Factor - AWS Analyzer
Mahojaswin Chittamuru, Ramiz Guliyev, Nathaniel Rubin, Aishwarya Silam, Alexander Stoyanov
Advisor: Joshua Cuneo
Sponsor: 7Factor

CS: MQP: Audio Capture and Summarization as Additional Context in ReVisit
Hien Hoang, Ethan Shanbaum, Rohit Tallapragada, Ivan Zheng
Advisor: Lane Harrison

Webjam: A team-based software competition platform
Ace Beattie, Matthew Franco, Matthew Hagger, Margareth Hosie
Advisor: Wilson Wong

Optical Chip Design for Matrix Vector Multiplication
Abhi Chillara
Advisor: Dough Petkie (PH), Hanmeng Zhan

An Entity is All You Need: A Framework and a Benchmark for Entity Extraction in eDiscovery
Artem Frenk, Itay Kohen, Jacob Wiberg
Advisor: Roee Shraga
Sponsor: HaystackID

Leaves of Fate: A Narrative Puzzle Platformer
Jacob Antepli, Casey Costa (IMGD), Jeremy King, Benjamin Levy, Katherine Tse
Advisor: Ben Schneider (IMGD), Gillian Smith

SAFELAW (Skill-Augmenting Framework for Enhanced Legal Analysis & Writing)
Brett Gerlach, Keerthana Jayamoorthy, Julian Mariscal
Advisor: Erin Solovey

Accelerating GUI Testing at AST
Zachary Szeto, Connor Tam, Arianna Xie
Advisor: Lane Harrison
Sponsor: Applied Signal Technology
Project Center: Silicon Valley, CA

DigiDiva
Marisa Higgins, Walton Pelkey
Advisor: Ben Schneider (IMGD), Gillian Smith (IMGD/CS)

Predicting Mental Health Using a Multimodal Approach
Dorothy Alexander, Corryn Fisher, Brooke Powell
Advisor: Shichao Liu (CEAE), Oren Mangoubi (MS)

LEMURS RADAR: Interactive Dashboard for Risk Alerting of College Students
Skyler Dooley, Jeffrey Li, Daniel Mastrobuono, Nixon Showalter, Willem van Oosterum
Advisor: Elke Rundensteiner
Sponsor: National Institute of Health

Treasure of the Sierra Madre Digital Boardgame
Max Allen, Ethan Carter, Jacob Curtis, Irene Fisher, Dan Hudon, Eric Maher
Advisor: Lena Dias (IMGD), Michael Engling, Adryen Gonzalez (IMGD), Edward Gutierrez (IMGD), Melissa Kagen (IMGD), Skye Pritchard (IMGD)
Sponsor: Chupacabra Productions (Adryen Gonzalez)

Disillusion
Sarah Bodkin, Charlie Doud, Eliza Hackler, Teddy Ker, Jay Weil, June Whittall, Michaela Wooding
Advisor: Michael Engling, Melissa Kagen (IMGD), Ralph Sutter (IMGD)

InnoSpire Glasses Companion: An AI-Driven Multilingual Assistive Mobile Application for Visually Impaired and Blind Individuals
Zachary Gluck, Samruddhi Naik
Advisor: Chun-Kit Ngan (DS)
Sponsor: InnoSpire Technology Limited

Terrain Generation via Deep Learning
Joseph Abata, Riley Meyers, Elias Montas
Advisor: Ethan Prihar

Create "MyAnalyst" Fidelity's analytics search engine
Dan Do, Amir Jarad, Colin Nguyen, Jacob Ruppert
Advisor: Joshua Cuneo, Eugene Okyere-Yeboah (BUS), Daniel Treku (DS)
Sponsor: Fidelity Technology Group, LLC
Project Center: FinTech

Optimal Piano Fingering Using Dynamic Programming and Physiological Constraints
Griffin Brown, Cody LaBonty, Tyler Mcinteer, Sean Peacock
Advisor: Scott Barton (HUA), Jacob Whitehill

Assessing Financial Literacy Engagement and Learning Through Data Visualizations and AI
Anthony Coutts, Peter Czepiel, Colin Hoar, Timothy Hutzley
Advisor: Lane Harrison, Stacy Shaw (SSPS)

Rotation Invariance in Generative Point Cloud Models
Roberto Correa
Advisor: Ziming Zhang (ECE)

ESAPT: ERD to SQL Artificial Intelligence Powered Transpiler
John Burke, Patrick Durgin, Yara Nabih, Phuong Tran, Daniel Zhang
Advisor: Rodica Neamtu, Wilson Wong

Digital Camera Shadow Detection as a Physical Interactive Control Mechanism
Weilun Deng, Dennis Field, Lukas Gandras, Peter Griffiths, Batyrkhan Saparuly
Advisor: Gillian Smith (CS/IMGD) Ben Schneider (IMGD)

Myndspell: The Wizard Maze
Daniel Blatner, Thea Cloyd, Kevin Koroveshi, Sebastian Lanz, Samantha Paffenroth
Advisor: Matthew Ahrens, Karen Stewart (IMGD)

AI for Impact: Inferring Suicidal Ideation via Smartphones
Jonathan Buwembo, Mirabelle El Chalfoun, Santiago Giraldo Godoy, Eric Li, Elizabeth Mastrangelo, Jacob Murphy
Advisor: Elke Rundensteiner
Sponsor: National Institutes of Health (NIH)

Enhancing API Usability Through MCP Context Delivery for LLMs
Minh Bui, Rodrigo Marcenaro, Keira Schoolcraft
Advisor: Marcel Blais (MA), Wilson Wong
Sponsor: Quantifi Solutions

ProjectForce Team #2
Michael Bretz, Quan Dinh, Lucas Marble, Thinh Pham, Chris Smith
Advisor: Joshua Cuneo

Bonbon MagosMaster Companion: A Multilingual AI Robot Integrated with Mobile Chatbot Capabilities for Enhancing AI Education and Learning Engagement
Ryan Colberg, Pujeet Kapoor, Ken Sebastian
Advisor: Chun-Kit Ngan (DS)
Sponsor: Bonbon Robotics

Billionaires Are Bad: Technical Challenges
Ethan Busa, Ellen Kim, Zachary Robinson
Advisor: Matthew Ahrens, Farley Chery (IMGD), Melissa Kagen (IMGD), Gillian Smith

AI Modeling for Predicting Student Academic Success
Ajay Bhagavatula, Klaudio Fusha, Tyler Garofalo, Jason Zhang
Advisor: Elke Rundensteiner

Latency and Jitter Compensation for Cloud-based Game Streaming
Jake Lariviere, Thomas O'Leary, Benjamin Perry
Advisor: Mark Claypool

Evaluating the Impact of Latency and Time-Warp Techniques in First-Person Shooter Games
Qiushi Chen, Phuong Mai Do, Trang Tran, Devin Mihaichuk
Advisor: Mark Claypool
Sponsor: NVIDIA

Crack the Code: Where AI Meets Cybersecurity
Matthew Cloutier, Arman Gevorgyan, Cole Gilbert, Nathan Ewell
Advisor: Fatemah Ganji (ECE)

Structural Characterization and Comparative Analysis of Viral Envelope Proteins of Betacoronaviruses
Kai Davidson, Aksel Jensen
Advisor: Dmitry Korkin

Discovering User Patterns: The Role of Behavioral Clustering in Re-engagement Modeling
Era Kalaja, Maria Anastasia Masouti, Duyen Le, Dan Nguyen, Abhiram Yammanuru
Advisor: Donald Brown (ECE), Randy Paffenroth (MA)
Sponsor: DraftKings

Coined Quantum Walks
Lorenzo Cassano, Jason Luc, Dat The Loac
Advisor: Hanmeng Zhan

Exploring the Impact of AI-Generated Video on Students' Learning Outcomes
Ka Kuen Nicholas Ho, Berenis Tekin
Advisor: Shubbhi Taneja

Mapping Global China: Visualization Design and Development (SCNE) 25-26
Oluwapelumi Akingbile, Jiahui Lin, Joe Molder, Alexander Shettler
Advisor: Lane Harrison, Jennifer Rudolph (HUA)
Sponsor: Mapping Global China

Surgical Control Assistant: Live-tablet Platform for an Enhanced Laser-Integrated Robot (SCALPEL-IR)
Kimberly Cummings, Diego Pena-Stein, Leonel Strangman, Kang Zhang
Advisor: Loris Fichera (RBE)

Computational Optimization Framework for Personal Task Scheduling
Ana Caroline Sakai, Victoria Escuer, Teodor Hellgren, Yasutora Ito, Utku Yakar
Advisor: Andrew C. Trapp (BUS), Özge Aygül (DS)

Gaming-Inspired Human Machine Interfaces for One-to-Many Control of Robotic and Autonomous Systems
Nicholas Giangregorio, Brendan Reilly, Shengce Zhou
Advisor: Max Chen, Erin Solovey

6LoBAC: A Novel IPv6 Data Link
Kelly Lynn
Advisor: George Heineman

POSTER SESSIONS
Innovation Studio, Second Floor
Session B: 1:00 pm to 3:00 pm

Optimization of Measurement Protocols for Quantum Sensing
Paola Frunzio
Advisor: Raisa Trubko (Physics), Harmony Zhan

AI-in-the-Box: Generating Snake-in-the-Box Constructions with AI
Chase Carstensen
Advisor: Daniel Reichman, Gabor Sarkozy

ECE 2049 Reimagined: Upgrading Embedded Systems Labs for Future Applications
Shannon Miranda, Kyle Schmottlach
Advisor: Fatemeh Ganji (ECE), Bashima Islam (ECE), Shahin Tajik (ECE), Zane Weissman (ECE)

AR Glasses Open Source Coding and Game Development
Luisa Bloch Garcia, Kyra Brown, Daniel Damasceno, Ellie Scharpf
Advisor: Matthew Ahrens, Ralph Sutter (IMGD), Griffin Tabor (RBE)

GenAI Augmented Reality for Collaborative Architectural Design
Nathaniel Powers, Maxwell Wiesenfeld
Advisor: Soroush Farzin (CEAE), Shichao Liu (CEAE), Gillian Smith

Enhanced Photon Emission Microscopy Pipeline
Noah Solomon
Advisor: Fatemeh Ganji (ECE), Shahin Tajik (ECE)

Improving PMKS+: A Web-Based Angular Application for Mechanism Simulation
Esther Kim, Tien Nguyen, Matthew Walsh
Advisor: David Brown, Pradeep Radhakrishnan (MME)

Modular Abstraction for Robotic Systems (MARS)
Reilly Desai, Colin Masucci, Olivia Olsen
Advisor: Carlo Pinciroli (RBE)

Development of Desktop CNC Milling Machine
Nicholas Driscoll, Matthew Papesh, Beckett Peale, Alex Stepanov, Chris Warneck, Daniel Willins
Advisor: Joshua Cuneo, Pradeep Radhakrishnan (MME)

ADARC
Anand Pagnis, Jace Howhannesian, Sameer Augustine
Advisor: David Brown, Pradeep Radhakrishnan (MME)

FSAE Electric Racecar
Casey Midgley, Max Mobley
Advisor: William Michalson (RBE)

UI State Replication: A Zero-Downtime Patching Solution
Mia Frattasio, Ceci Herriman
Advisor: Craig Shue

Concord: An Agreement-Aware Multi-Adjudication Pipeline for LLM Evaluation
Tyler Bliss, Aila Iyer-Singh, Mahit Verma
Advisor: Bashima Islam

Energy Efficient AI Models
Antonio Aguiar, Tobias Chin, Ha Chu, Hemanth Vadlamani, Oleg Zabolotnev
Advisor: Xiangnan Kong

The Bounce Allocator: Hardening the Linux Kernel
Charles Engler, Nicholas Golparvar, Vivek Jagadeesh
Advisor: Robert Walls

GoatHub: Connecting WPI Students to Clubs with Personalized Recommendations
Ayush Kulkarni, Giampaolo Maneri, Carter Moore
Advisor: Sakire Arslan Ay

Study of Multiparadigm Design Patterns in Software Development
Connor White, Ian Wood, Yanding Yin Sovenis
Advisor: Sakire Arslan Ay

Data Visualization and Behavioral Economics
Asha Buchanan, Aanan Goyal, Conor McCoy
Advisor: Lane Harrison, Daniel Reichman

Piezo IR Preamp
Violet Colwell, Nhan Tran, Nikolai Tan
Advisor: Alexander Wyglinski (ECE)

Scaling Diffusion Models to Large Sparse Graphs
David Dechantsreiter, Weaver Goldman, Botao Hu, Gia Pham
Advisor: Oren Mangoubi (MA), Fabricio Murai

Bank-Grade Financial Ledger for Equity Crowdfunding Platform
Mohamed Djadid, Emre Sunar, Rayyan Syed
Advisor: Wilson Wong

AI Shark Species Identification from PCR Melting Curves
Alessandra Giovenco, Maxwell Hobbs, Connor Jason, Aishwarya Sinha, Ben Zeng
Advisor: Kyumin Lee

7Factor 2025-2026: ProjectForce Planning Tool
Quinn Budnick, William Gilmore, James Ly, Connor Pyles, Guillermo Wiandt
Advisor: Joshua Cuneo
Sponsor: 7Factor

Automatically Detecting Suboptimal End-User Experiences
Nathan Amend, Tyler Busack, Alexander Lap, Benson Lin, Evan Lutz
Advisor: Lane Harrison, Craig Shue
Sponsor: Industry Sponsor

Humanoid Robotics: Server, Driver Station, and CI/CD pipeline
Rio Blumenthal, Silas Joy, Jacob Molnia, Jonathan Tinti
Advisor: Taylor Andrews, Pradeep Radhakrishnan (MME)

Designing A 3D Printed Humanoid Chess Robot with AI Computer Vision
Nate Caughron, Ethan Ford, Nicolas Graham, Aziel Habtemichael, Arjun Vyavaharkar, Max Williams
Advisor: Taylor Andrews, Pradeep Radhakrishnan (MME)

Developing a Bipedal Humanoid Robot with Reinforcement Learning-Based Locomotion
Pau Alcolea, Maddux Berry, Max Inman, Kaitlin Karsten, Evan Seki
Advisor: Taylor Andrews, Pradeep Radhakrishnan (MME)

Humanoid Robotics: Improved Circuitry and Urchin Motor Firmware
Rick Hughes, Tahjé Joseph-Bryan, Samuel Kim, Gabriel Weaver
Advisor: Taylor Andrews, Pradeep Radhakrishnan (MME)

Optimizing Humanoid Robotics
Jacob Molnia
Advisor: Taylor Andrews, Pradeep Radhakrishnan (MME), Herman Servatius (MA)

BodyCam-VQA: Enhanced Body-Worn Camera Video Captioning
Matthew Alex, Karish Gupta, Alex Li
Advisor: Xiaozhong Liu
Sponsor: Axon

Simulations of High Density Crowds: Evaluating the Usability of the Game Engine Godot in Modeling Crowd Evacuation
Emma Herman, Jack Morris, Hrithika Ravishankar, Colin Williams
Advisor: Jennifer Mortensen

EcoTarium Explorer: Increasing Accessibility for the EcoTarium
Theo Sawyers, Dylan Vo, Justin Yip, Chenxi Zeng
Advisor: Rodica Neamtu
Sponsor: EcoTarium

Fintech MQP Measuring Simulated AI Literacy
Deepak Dinesh, Grace Robinson, Krishna Garg, Shevlin Jaffe
Advisor: Daniel Treku (BUS), Eugene Okyere-Yeboah (BUS), Marcel Blais (MA), Wilson Wong
Sponsor: Alternate Investment Firm (Redacted)

IoT Rule Conflict Detection in Smart Home Environments
James Barmakian, Manuel Colon, Mikel Nourse
Advisor: Xiaoyan Sun

7Factor 2025-2026: Webhooks
Brian Borghesani, Elijah Gray, Tim Kwartler, Javier Moncada, Aarogya Rijal
Advisor: Joshua Cuneo
Sponsor: 7Factor LLC

Data Analytics/Visualization
Jivan Baghsarian, Marie Hearst, Colin Lemire, Leo Leonard, Victor Radina
Advisor: Craig Wills

Memory Safety for Embedded Systems
Eamonn Prendergast
Advisor: Robert Walls

Compiler Optimization using Whole Function Vectorization
Jackson Bonnen, Baret Buckley, Robin Husman, Madalyn Nguyen, Kevin Provenson
Advisor: Matthew Ahrens

Integrating PGS Analysis and Multimodal RAG for Historical Nuclear Research Files
Arjun Bhat, Leala Carbonneau, Jake DePietro, Krish Desai
Advisor: Torumoy Ghoshal (DS)
Sponsor: Idaho National Laboratory

Earthovia 2.0: Curriculum Building and Auditing Software Technical Report
Ronak Wani, Hemankit Vallurupalli
Advisor: Matthew Ahrens, Roee Shraga

From Desktop to Pockets: Exploring a Mobile-First Framework for Visualization Studies
Amanda Chavarria Pleitez, Rowan Faulkner, Jeremy Kurtz, Christian Reynolds, Brandon Yeu
Advisor: Lane Harrison

Solving Dynamic Programming Problems Using Code Generation
Charles Anton Sibal, Matthew Samuels, Michael Lin
Advisor: George Heineman

Augmented Reality Lab Tour
Claire Desrosiers, Lev Giffune, Jesse Vu
Advisor: Jane Li (RBE)

Bodycam-VQA
Matthew Alex, Karish Gupta, Alex Li
Advisor: Xiaozhong Liu
Sponsor: Axon

Student Teaching Staff Web Application
Ryan Addeche, Mina Boktor, Jacob Burns, Ethan Knorring
Advisor: Matthew Ahrens, Yu-Shan Sun

A Declarative Specification for Clinical Reference Range Number Line Visualizations
Zoe Fisk, Morgan Vasiliou, Zachary Medailleu, Skyler Lin
Advisor: Lane Harrison