

Interdisciplinary Capstone Design, 2025-2026

Project Options

2025-2026

Proj. No.	Project Sponsor	Project Title	SEA w/ SAPA Agreem.	US Citizens Only?	Likely Discipline Fit
1	NASA ISGC	Fiber Optic Sensor for Monitoring for Agricultural Spray Tank Applications		US only	ME, ECE, CS
2	NASA ISGC	Small-scale Wastewater Treatment and Nitrogen Recovery System		US only	ME, BE
3	Kip Sikes	Portable Seat Assist			ME
4	UI CALS	Improving Performance of Sprayer Drone for Precision Agriculture			ME, ECE, CS
5	UI CESS	Ember Generator Enhancement for Wildfire Research			ME, BE
6	Spudnik	Bearing and Pipe Joining Method			ME
7	Schweitzer Engr. Labs	Automated Visual Testing Apparatus	Y		ME
8	Schweitzer Engr. Labs	Optimization of Modular Harness Formboard	Y		ME
9	Precision Agricultural Sensors	In-situ Plant Root and Rhizosphere Detection	Y		ME, ECE, CS, BE
10	Hyster-Yale	Oil cooled electric drive axle	Y		ME
11	Hyster-Yale	Isolated drive axle	Y		ME
12	HP	Test Apparatus to Simulate Shipment & Storage of Toner Cartridges	Y		ME
13	USDA Forest Serv.	Conductivity-based velocity probes			ME, ECE, CS
14	Idaho Nat. Laboratory	Robotic loading of fuel pins in confined spaces			ME, CS, CYB
15	Vandal Motorsports	Baja Integrated Suspension and Chassis			ME
16	UI ME	Artificial Intelligence Mouse Trap			ME, ECE, BE
17	UI ME	PrinTimber Twin-Screw Extruder Redesign			ME

18	Schweitzer Engr. Labs	Aluminum Electrolytic Capacitor Polarity Identification	Y		ECE
19	UI ECE	Cutting-Edge Python Tools for Electromagnetic Wave Visualization			ECE, CS
20	UI ECE	Electric Dune Buggy			ME, ECE
21	UI ECE	Intelligent Wireless Power Beaming System			ECE
22	NASA ISGC	Advanced & Intelligent Small Satellite Development		US only	ME, ECE, CS
23	IWDC / Micron	Advanced 3D Semiconductor Packaging with TSVs			ME, ECE
25	UI CS	The Attack on AI			CS
26	UI CS	Uncertainty Quantification for Deep Learning			CS
27	UI CS	Development of LLM-driven smart agents for user-friendly access to an open data portal			CS
28	UI CS	LLM-assisted data and knowledge extraction from legacy literature			CS
29	UI CS	VR Clean Room			CS
30	UI CS	Virtualized Cybersecurity Lab Platform for Scalable Network Security Emulation			CYB
31	UI CS	Software-Defined PLC			CYB
32	UI CS	Design and Implementation of a Secure On-Demand Wireless Thumb drive			CYB
33	UI CS	Attacking and Defending Machine Learning Models: An Evaluation of Adversarial Techniques			CYB
34	UI CS	Customizing Large Language Models for Asset-Based Cybersecurity Risk Assessment			CYB
35	UI CS	Re-compile security-enhanced legacy programs			CYB
36	UI CS	Automatically generate effective test cases to launch security testing on programs			CYB
37	UI CS	AI-facilitated binary analysis/reverse engineering			CYB
38	UI CS	Design and Implementation of LLM-Based IoT Honeypot.			CYB

39	UI CS	Auto-Vision KB			CS
40	UI CS	LLM Limits			CS
41	UI CS	G-SQLX			CS
42	UI CS	A Simulation Framework for an IoT Secure System and Network			CS
43	UI CS	Design and Simulation of a large Paper Roll Cutting Robot			CS (CdA)
44	UI CS	Applying Machine Learning with External Hardware and Video feedback			CS (CdA)
45	UI CS	AI-powered Academic Planner Agent I			CS
46	UI CS	Stream Database Support for Unreal Engine 5 Plugin			CS
47	UI CS	Modbus ICS Protocol Support for Unreal Engine 5 Plugin			CS
48	UI CS	Calibrated Software Datasets for Binary Analysis Research			CS
49	UI CS	Software Test Suites when Integrating AI into the Software Development Process			CS
50	UI CS	Image-based Fiber Tracking to Understand Structure-Function Relationships in Developing Tendons			CS, BE
51	UI CS	Computer Vision-Assisted Identification of Killer Yeast Strains			CS
52	UI CS	DMX Project			CS, CYB (CdA)
53	UI CS	Virtual Fence Software Optimization			CS
54	UI CS	AI for Agriculture			CS, CYB
55	Lightcast	Lightcast Localization Software	Y		CS, CYB
57	UI BE	Bench scale Water Treatment Bioreactor for Teaching Laboratory			BE, ME, EE
58	UI BE	Smart Respiratory Protection for Athletes in Polluted Environments			BE, ME
59	UI BE	Upgrading a cyclic tensile strain bioreactor to advance tissue engineering research			CS, EE, BE