

## Cal Poly AI Poster Showcase Program: November 6, 2025

Poster #	Poster Theme	Title	Poster Team	Description
A1	Teaching & Learning	<b>Designing the P–A–H Continuum with AI: From Direct Instruction to Self-Determination</b>	Andrea Somoza-Norton — Bailey College of Science and Mathematics	Examples of adapting lessons along the Pedagogy–Andragogy–Heutagogy (P–A–H) continuum, using AI as a supplemental instructional tool rather than a replacement. Shows how instructors evolve from director→coach→partner and learners from receiver→problem-solver→designer, and where AI supports each stage (clarifier/exemplar bank; co-planner/feedback engine; critical friend/sandbox/reflection trigger). Highlights agency via Goals, Pathways, Evidence, Reflection, with sample templates and policies.
A2	Teaching & Learning	<b>An AI Tutor for Boosting Engagement and Confidence in Chemistry</b>	Javin Oza; Pratish Patel — BCSM	A specialized AI tutor (instruction-tuned on course content) integrated into Canvas to provide 24/7 personalized support in Chemistry. Verifies equations and molecular structures before explanations. Pilot in General Chemistry/Biochemistry increased engagement and confidence; survey of 32 students showed 78.1% reported benefits.
A3	Teaching & Learning	<b>Integrating AI Literacy and Critical Thinking into BRAE-216 through a Flipped, AI-Enhanced Learning Model</b>	Bo Liu — BRAE, CAFES	Redesign of a core course into an AI-enhanced flipped classroom using ChatGPT Edu and NotebookLM. Students use AI for exploration and keep an AI Study Log (prompts, helpful/misleading responses, verification, questions). In-class assessments verify mastery without AI. Emphasizes AI literacy, critical thinking, and ethical awareness.
A4	Teaching & Learning	<b>Scaling Career Education Through AI: Leveraging Big Resume to Advance Equity and Access</b>	Amie Hammond — Career Services	Big Resume provides instant, personalized feedback on resume content, structure, and formatting, enabling scalable, equitable career education. Frees in-person counseling to focus on deeper development and can be embedded in courses as a pedagogical tool.
A5	Teaching & Learning	<b>Scribere Aude (with AI!): Teaching and Learning How to Use Generative AI for Argumentative Essay Writing</b>	Jacob Sparks; Ava Wright; Daniel Story; Dianna Winslow — CLA, Philosophy	A CSU-funded project integrating ChatGPT.edu into PHIL 300 across 2025–26 to distinguish helpful/ethical uses of genAI in argumentative research writing and develop replicable instructional practices and assessments.
A6	Teaching & Learning	<b>Teaching Sociology in the Era of Generative AI</b>	Jess Lee; Martin Jacinto (Chico State) — CLA, Social Sciences	Overview of opportunities/challenges for using genAI in sociology instruction to support quantitative research, reduce statistics anxiety, and break down complex tasks—while cautioning against over-dependence and equity gaps in access.
A7	Teaching & Learning	<b>Synchronizing Social Science and Artificial Intelligence [AI]</b>	Carmen Navarro, PhD — College of Liberal Arts, Communication Studies	A social-science-informed pedagogy for teaching and researching with AI, aligned with communication theory. Forthcoming Kendall Hunt publication (Jan 2026) details the approach and materials.
A8	Teaching & Learning	<b>Empowering Experiential Learning through an AI-Driven Agentic Design Framework for Engineering Labs</b>	Franz Kurfess; Jenny Wang; Paris Kalathas — CSSE	A CSU AI Educational Innovations project combining autonomous agents and genAI (ChatGPT, Gemini, Copilot) so students build and orchestrate multi-agent systems in dynamic environments, developing systems thinking and responsible AI literacies.
A9	Teaching & Learning	<b>Using AI tools For Electronic Test and Measurement Instrument Programming</b>	Dennis Derickson — Electrical Engineering	Activities from EE electives (EE475/456/452) that help students learn Python-based instrument automation, starting from syntax and starter code, then applying AI tools to accelerate troubleshooting and solution development.
A10	Teaching & Learning	<b>AI and Accessible Literacy: Preparing Teachers to Support Students with Disabilities</b>	Leah Wood — School of Education	Model for pre-service special-education teachers to: generate leveled passages (Magic School AI), create decodable texts aligned to phonics/science-of-reading, and produce comprehension questions (QuestionWell) mapped to IEP goals and MTSS tiers, following a human-in-the-loop validation protocol.
A11	Teaching & Learning	<b>Teaching Finance Through Generative AI</b>	Mahdi Rastad — Orfalea College of Business	Ways to integrate generative AI into finance education to enhance concept mastery and applied analysis.
A12	Teaching & Learning	<b>AI-Driven Agentic Framework for Engineering Lab Learning</b>	Franz Kurfess — CSSE	(Companion to A8) A framework to transform lab learning via agentic systems and genAI tools, emphasizing ethical, equitable practices.

A13	Teaching & Learning	Developing Reflective Design Practice Using AI Text-to-Image Tools	Bret Betnar — Landscape Architecture	A one-day Adobe Firefly workshop embedded in a garden design studio. Students use AI to iterate eidetic images, practicing reflective, exploratory, and critical design rather than seeking a single 'answer'.
A14	Teaching & Learning	Enhancing Academic Support in the Age of AI: Co-Constructing Ethical Guidelines for Peer-led Collaborative Learning	Dawn Janke; Lydia Keema; Jeff Milbourne — Office of Writing and Learning	The Tutoring and Learning Center engages student staff in co-creating an ethical AI framework across coaching, tutoring, study sessions, and workshops—centering collaborative learning and community.
B1	Research, Creative & Practice	Evolving but not solving: A Genetic Algorithm's struggle with LLM reasoning about an introductory physics problem	Tom Bensky — BCSM, Physics	A GA generates structured question sequences for an LLM to answer about a physics problem, evolving toward equation sequences that should solve it. Fitness compares to human-verified sequences (via Levenshtein). Preliminary results: GA explores well, but solving remains elusive.
B2	Research, Creative & Practice	Detection of Downy Mildew in Arugula Using Modified YOLO Semantic Segmentation with Hyperspectral Imaging and DMI	Bo Liu; Bennett Morris; Jenna Keller; John Joseph Urrutia; Shunping Ding — BRAE, CAFES	Comparing RGB vs. near-infrared (760/850 nm) + Downy Mildew Index inputs for YOLOv12m-seg (ConvNeXt backbone). NND images outperform RGB; mask mAP@0.5 reaches 0.92 at 640-px.
B3	Research, Creative & Practice	Green Chat	Maximilian Dauner; Franz Kurfess — Noyce School of Applied Computing; MUC.DAI (UAS Munich)	A cross-institution project to reduce LLM carbon footprint via dynamic caching, query classification, and pipeline optimization while maintaining educational utility.
B4	Research, Creative & Practice	Designing the Cal Poly Super App: Exploring AI-Driven Experience Design and Student Engagement	Ellen Curtis — Cal Poly Partners	Human-centered, low-code prototyping of an AI-supported student 'Super App' integrating services, commerce, and engagement; explores personalization, accessibility, and ethics.
B5	Research, Creative & Practice	Real-Time Marker-less 2D and 3D Hand Tracking for Intuitive Robotic Arm Control	Behnam Ghalamchi; Dylan Featherson — CENG & ME	Stereo RGB cameras + MediaPipe hand tracking to control a Quanser QArm via reconstructed 3D hand positions; compares 2D, 2D+depth, and stereo configurations for latency/accuracy trade-offs.
B6	Research, Creative & Practice	Supporting Appropriate AI Reliance through Goal Setting and Goal Priming	Hyeonik Song — CENG, Mechanical Engineering	Framework for a cognitive assistant that helps designers set/maintain appropriate goals with AI teammates, aligning reliance with true AI capabilities for creative design.
B7	Research, Creative & Practice	From Execution to Strategy: How Gen AI Is Reshaping the Work and Thought Processes of UX Designers	Christine Lee; Michal Strahilevitz — CLA, Graphic Communication	Interviews with 20 UX professionals show genAI shifts cognitive work toward problem framing and strategy; seniors see AI as a strategic partner, juniors worry about skills/jobs.
B8	Research, Creative & Practice	Development of a Sensing System Coupled with Deployable Machine Learning Models for Prosthetic Applications	Long Wang — College of Engineering	Pressure-sensor system + compact CNNs on Sony Spresense microcontroller to monitor socket fit in lower-limb prosthetics; robust, transferable models for comfort and injury prevention.
B9	Research, Creative & Practice	Explainable Machine Learning for Partial Differential Equations	Amuthan A. Ramabathiran — College of Engineering, Aerospace Engineering	Develops interpretable ML architectures for PDE solvers, resisting black-box empiricism; presents two applications including physics-informed, intrinsically interpretable networks.
B10	Research, Creative & Practice	A Reinforcement Learning Framework for Multi-Scenario Autonomous Parking	Ria Kanjilal; Ravi Panchal — CPE	Unified PPO-based RL that handles forward, reverse, diagonal, and parallel parking in one architecture with a composite reward over proximity, alignment, and collision avoidance.
B11	Research, Creative & Practice	Advancing Supply Chain Resilience through AI-Powered Intelligent Supply Chain Digital Twins (iSCDT)	Mohamed Awwad; Zack Kramer — IME	Human-centered, real-time supply chain digital twins for decision-making and resilience, aligned with Industry 5.0; collaborative platform for scenario testing and data sharing.
B12	Research, Creative & Practice	Predicting Force Chains in Granular Materials Using Graph Neural Networks	Eric Ocegueda; Sean Oxenhorn — Mechanical Engineering	GNNs trained on DEM data to estimate particle-level forces and force-chain structure in densely packed granular media, reducing computational cost vs. DEM.
B13	Research, Creative & Practice	IntelliSAR: Applying Artificial Intelligence to Enhance Search and Rescue Operations	Franz Kurfess; Paris Kalathas; Gary Bloom; Chris Young — CSSE (with SAR partners)	Digitizes SAR workflows (e.g., Missing Person Questionnaire) and applies ML, probabilistic reasoning, and genAI to produce actionable search intelligence from multi-source data.
B14	Research, Creative & Practice	Shark Spotting: Real-Time On-Board Object Detection with Drones	Franz Kurfess — CSSE (with CSU Long Beach Shark Lab & Marine Sciences)	UAV-based object detection (Faster R-CNN; YOLO v4-v10) applied to coastal safety; curated datasets and real-time engineering challenges toward on-board detection.

B15	Research, Creative & Practice	Machine Unlearning: The Right to Be Forgotten	Dongfeng Fang; Colin Ngo — CSSE, CPE	Compares Selective Synaptic Dampening (SSD) and Loss-Free SSD for removing data influence without full retraining; CIFAR-20 results match retraining on retention/MIA while forgetting targets.
B16	Research, Creative & Practice	Learning AI by Doing: A Pilot Study of Human-AI Collaboration and Employee Stress in Guest Services	Pei Zhang; Keri Schwab; Amelia Iseley; Ellie Rupert — Experience Industry Management	Simulation-based pilots in the Experience Innovation Lab to test realistic front-desk scenarios, multimethod stress measures, and procedures for larger human-AI collaboration studies.
B17	Research, Creative & Practice	Agentic AI in the Experience Industry: A Cross-Disciplinary Prototype	Brian Greenwood; Shen; Zhang; Canaan; Poornima; Nathan; Sahith; Cole; Mia; Lin — EIM & CS	Multi-agent architecture (research agent with graph-of-thoughts planning; retrieval pipeline; UI-parser agent) to support client-facing insights for experiential brand partnerships.
B18	Research, Creative & Practice	Empathetic AI Encounters: Pathways to Prosocial Behavior	Miranda Yin — OCOB Marketing	Across multiple experiments, high-empathy AI increases donation intent/amounts and volunteering via perceived AI humanness and empathetic influence; moderated by anthropomorphism proneness.
B19	Research, Creative & Practice	Technology Students' Reflections on AI Awareness & Literacy through Formal and Informal Learning Interactions	Ashish Hingle — OCOB; MHRIS	Six-week reflective journal study with 22 technology students surfaces how learners engage with AI on and off campus, informing opportunities to support AI literacy development.
B20	Research, Creative & Practice	Co-Working with AI: Psychological Drivers and Technostress Dynamics in Generative AI Use at Work	Yongcheng Zhan; Leida Chen — OCOB, MHR & IS	Using data from 412 professionals, integrates reasons-for/against (BRT), anticipated emotions (TAE), and technostress to explain extent of GAI use; control and positive emotions increase adoption.
B21	Research, Creative & Practice	When GenAI Floods the Feed, Human Voice Pays	Bingyi Wu; Yongcheng Zhan; Leida Chen — OCOB, MHR & IS	Multi-year panel from Hive Blog shows the marginal value of authenticity for token rewards turned positive ~1 year after ChatGPT and grew post GPT-4o, especially with low AI observability and concentrated rewards.
B22	Research, Creative & Practice	Enhancing U.S. Green Card Wait Time Prediction: A Hybrid ML Framework + Real-Time Web App	Joydeep Mukherjee; Puneet Agarwal; Gavin Lynch; Sofia Emilia Morris — CSSE & IME	Decision trees, random forests, AdaBoost, XGBoost, CatBoost, and DL models trained on DOL and USCIS Visa Bulletin data; interactive app provides forecasts/visualizations for planning.
B23	Research, Creative & Practice	Mapping Post-fire Hazards with Machine Learning	Stewart Wilson; G. Andrew Fricker; Aakash Ahamed; Jonathan Ventura; Paige Davis; Sanjana Checker — CAFES-NRES	Improves soil burn severity mapping with ML to better represent patch size and provide uncertainty estimates—informing risks of debris flow/flooding and recovery planning.
B24	Research, Creative & Practice	LLM-Driven Robotic Furniture for Adaptive Campus Spaces	Siavash Farzan; Cameron Wolff — Electrical Engineering	Prompt-driven system interprets user intent and orchestrates mobile furniture layouts with collision-free motion planning that respects accessibility and safety.
B25	Research, Creative & Practice	Session Scout: An AI-Based Personalized Decision Support System for Conference Session Selection	Puneet Agarwal; Alessandro Hill — IME	Content-based recommender using text embeddings of titles/abstracts and user interests to suggest sessions and generate personalized schedules.
B26	Research, Creative & Practice	Evaluating ML Models for Drone-Based Image Analysis of Coastal Ecosystem Dynamics	Jonathan Ventura; Katharine McDaniel; Pragati Toppo; Andrew Fricker; Ryan Walter — CSSE	Compares U-Net, DeepLab, and Segment Anything for eelgrass segmentation in Morro Bay drone imagery; U-Net top performer at ~88% test accuracy.
C1	Ethics, Policy & Governance	Food Is Fundamental: The Profound Ethical and Social Impacts of Robot Kitchens	Patrick Lin; Daniel Story; Ryan Jenkins — CLA, Philosophy	NSF project on the ethics of AI kitchens and robot cooks. Automation in food has unique social impacts; robots already prepare many foods, and AI invents recipes. Explores benefits/risks and societal implications.
C2	Ethics, Policy & Governance	A Case Study of ChatGPT's Rollout in the CSU System	Marshall Piros; Kaylie Marrs; Aubrie Adams — Communication Studies	Mixed-methods study (surveys/interviews) of early adoption at a CSU campus: students broadly adopt for brainstorming/clarification; faculty use more cautiously. Highlights tensions in literacy, governance, and pedagogy.
C3	Ethics, Policy & Governance	Humanity Compatible: Kantian LLM Value Alignment	Quinn Potter; Ava Thomas Wright — Noyce School of Applied Computing	Implements a Kantian agency framework via a modified Constitutional AI pipeline using Llama-3.3-70B with QLoRA and a DPO stage, aiming to enable human autonomy.
C4	Emerging Practices in Higher Ed	Ask the Catalog: An AI Copilot for Graduate Advising	Siavash Farzan — Electrical Engineering	MS Requirements Copilot answers natural-language questions and points to exact policy pages, reflects catalog-year differences, and defers when unsure—aimed at first-line clarity and reduced turnaround.

C5	<b>Emerging Practices in Higher Ed</b>	<b>Integrating Generative AI into Urban Planning Practices: A Framework</b>	Amir Hajrasouliha; Sahana Kotha; Blythe Haven Wilson; Ethan Michael Keller — CAED, CRP	Systematic literature review to map GenAI applications in planning/design and methods for collaborative/participatory planning; addresses ethics, data quality, and model limitations.
C6	<b>Emerging Practices in Higher Ed</b>	<b>Recommending the Right Academic Programs at Cal Poly: An AI-Based Interest Mining Approach</b>	Alessandro Hill; Puneet Agarwal — IME	BERTopic mines interest topics from all course descriptions to build a knowledge map; students select topics to receive a shortlist of matching programs via statistical backtracking.
C7	<b>Emerging Practices in Higher Ed</b>	<b>The Human Touch Meets Machine Intelligence: Exploring AI's Role in the Future of Experience Management</b>	Ye (Sandy) Shen — CAFES, Experience Industry Management	Mixed-methods study with alumni to examine AI adoption in the experience industry, shifts in roles/competencies, and perceived benefits, challenges, and ethics—informing curriculum design.
C8	<b>Emerging Practices in Higher Ed</b>	<b>AI-Enhanced Audio-Visual Infrastructure: Toward Intelligent, Ethical, and Sustainable Classrooms at Cal Poly</b>	Pei Zhang; Maneesh Kumar; Anthony Sawa; Vince Cimo; Scott Hermes — Information Technology Services	Python-based logging/analytics for Extron Global Scriptor integrates with scheduling/occupancy data for diagnostics, predictive maintenance, and support insights; also examines transparency, ethics, and sustainable AI.