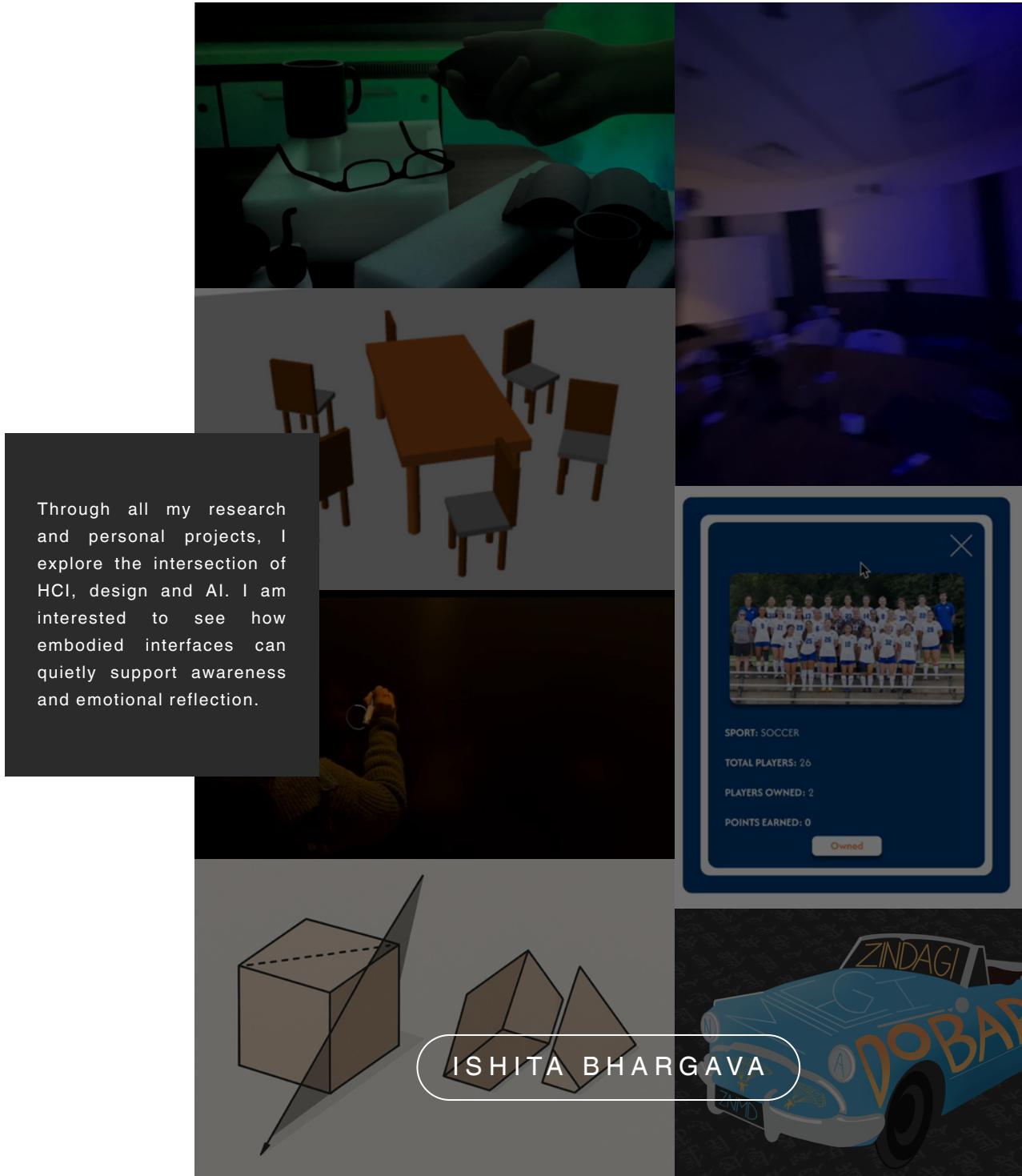
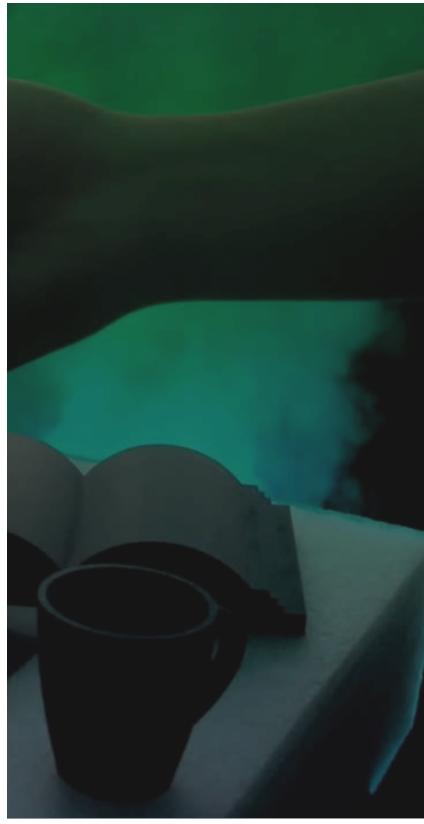
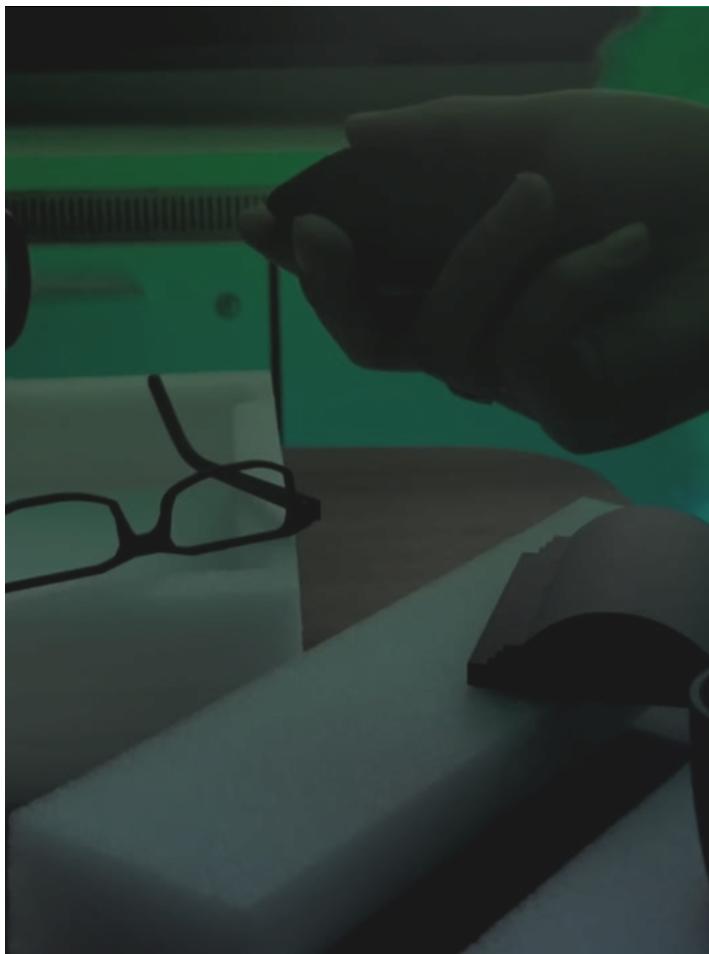


DIGITAL PORTFOLIO



物の哀れ: BETWEEN TIME'S FINGERS

TANGIBLE INTERFACES | INTERACTIVE INSTALLATION | HAPTICS AND SENSORS



I co-designed “Between Time’s Fingers,” an installation that uses tangible and sensory interaction to explore anticipatory grief, created for the CHI 2025 Student Design Competition. The project explores anticipatory grief through tangible and sensory interaction, using 3D-printed memory objects embedded with touch sensors that trigger projections of fading text, sound, and fog to represent the fragility of memory.

Through mixed-methods, user research and iterative prototyping, we found that materiality and multisensory feedback helped participants articulate memories and emotions that were otherwise difficult to express. My role focused on interaction design, programming, and iterative testing to balance technical precision with emotional sensitivity. This project deepened my interest in designing embodied, emotionally resonant interfaces that bridge technology, memory, and human experience.

物の哀れ: BETWEEN TIME'S FINGERS

TANGIBLE INTERFACES | INTERACTIVE INSTALLATION | HAPTICS AND SENSORS



Hardware design includes:

- 3D Printed Objects
- Capacitive Touch Sensors
- Projection System
- Fog Machine
- Haptic Feedback and Thermal Actuation

Software design includes:

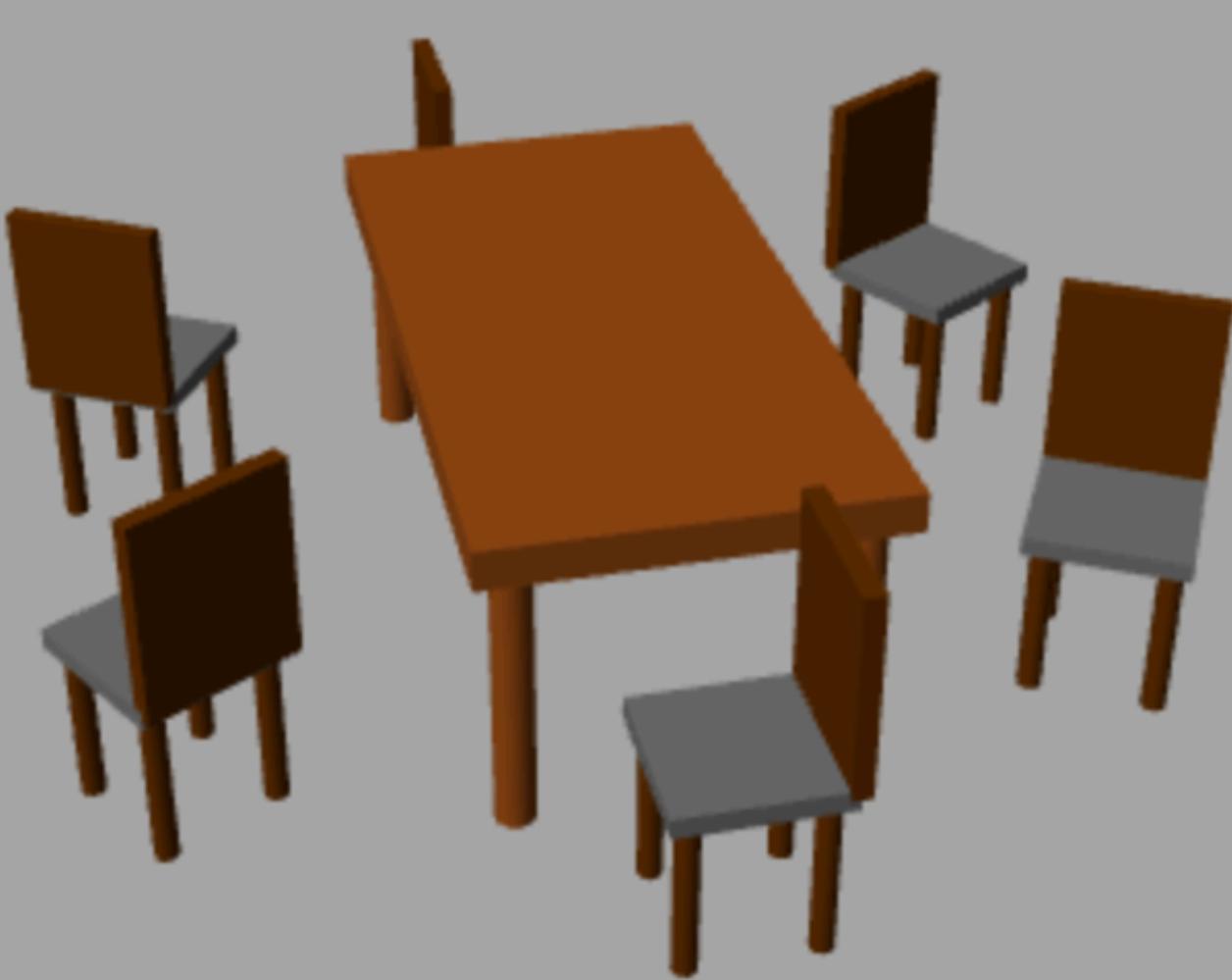
- Projection Mapping
- Sensor Control and Integration
- Audio and Sound Design
- Interactive Media Design
- Visual Content Creation

This foundation sets the stage for future advancements, including expanded sensory modalities such as scent and motion, immersive Augmented Reality (AR) and Virtual Reality (VR) environments. These innovations will deepen emotional engagement, offering more personalized and accessible experiences for diverse audiences.

By bridging the gap between physical presence and emotional absence, "Between Time's Fingers" not only creates a space for grief and remembrance but also provides a powerful medium for healing and connection, inspiring

BENCHMARKING AI'S SPATIAL ABILITY

GENERATIVE AI | SPATIAL AI | BENCHMARK RESEARCH

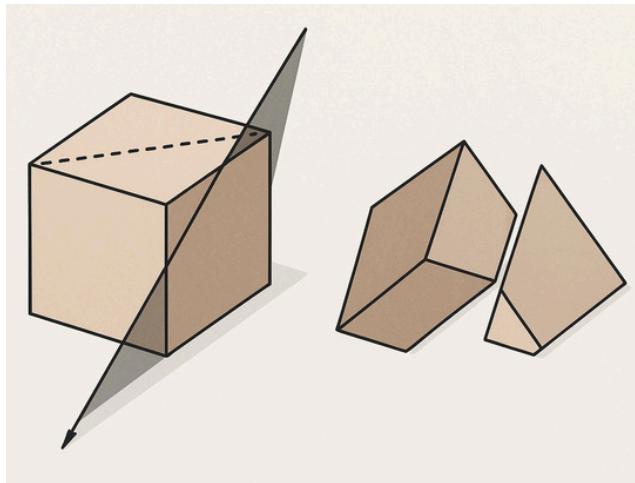


I co-led an independent study titled “How spatially intelligent is AI?” that examined whether conversational AI is spatially intelligent and if so, till what extent. The first part of the project compared a traditional web-based origami tutorial to a custom GPT model that guided users through step-by-step folding, provided real-time feedback, and analyzed user images.

I analyzed the AI’s origami instructions for spatial accuracy, revealing common mistakes and inconsistencies in its guidance. Based on this preliminary study, I led a benchmarking study testing how generative AI models understand and communicate spatial relationships. Using tasks modeled on spatial reasoning taught in kindergarten, I compared models on their ability to produce clear instructions, generate images, and interpret spatial language.

BENCHMARKING AI'S SPATIAL ABILITY

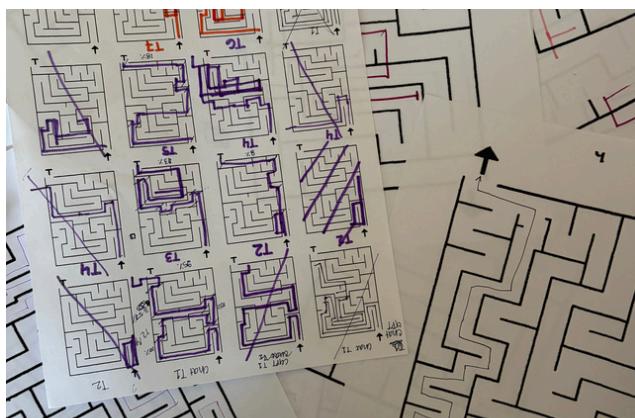
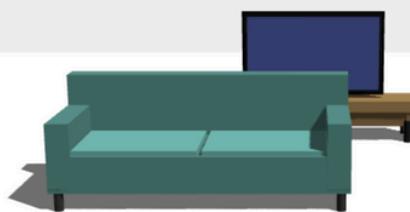
GENERATIVE AI | SPATIAL AI | BENCHMARK RESEARCH



ChatGPT 5.0, Gemini 2.5 Flash and Claude Sonnet 4.5 were tested across 4 different Spatial Domains:

- Spatial Navigation
- Spatial Relationships
- Spatial Composition
- Spatial Transformations

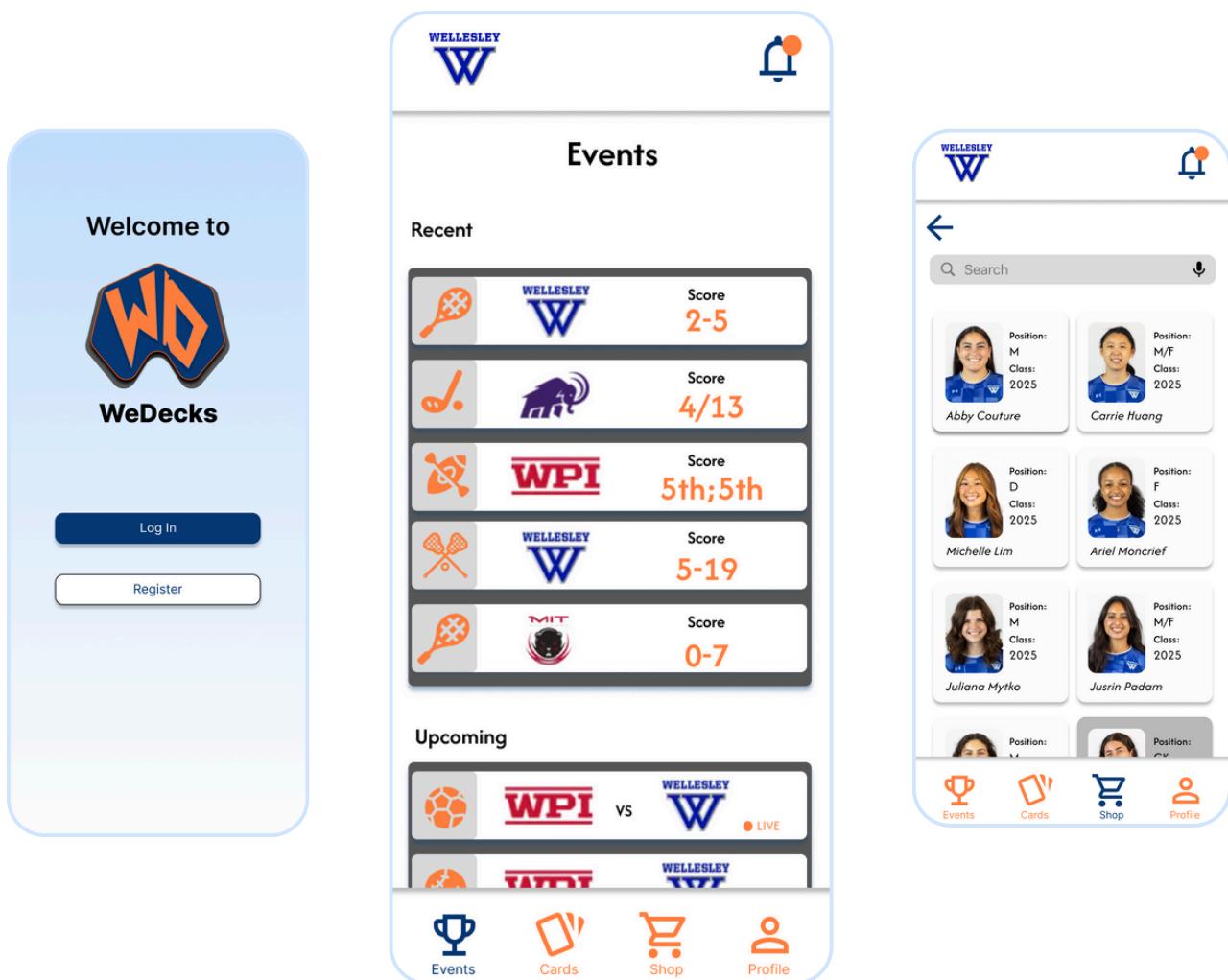
Each model followed a shared experimental protocol and was scored on accuracy, speed, and consistency. The study hypothesized that while AI systems can describe spatial relations linguistically, they struggle with embodied reasoning and 3D transformations. Understanding AI's successes and limitations within spatial intelligence is becoming increasingly important as AI evolves to help humans in the physical world.



This work aims to establish an early baseline for Spatial AI and deepened my interest in how future models might bridge the gap between language-based reasoning and human spatial understanding.

WE-DECKS: SPORTS AWARENESS APP

USER EXPERIENCE DESIGN | PROTOTYPE DESIGN | UX RESEARCH



To explore how interactive design can foster campus community, I have created a prototype app to design a fantasy card game centered on Wellesley athletics. The app allows students to collect digital player cards, earn points for attending games, and redeem rewards with the aim of turning sports engagement into a shared, game-like experience.

I conducted user research, prototyping, and evaluation to understand how play and competition could make information about teams more visible and exciting while simultaneously not negatively affecting athletes. Testing showed that students found the interface clear and enjoyable, and that the card-collection mechanic encouraged ongoing engagement.

WE-DECKS: SPORTS AWARENESS APP

USER EXPERIENCE DESIGN | PROTOTYPE DESIGN | UX RESEARCH

The collage illustrates the WE-DECKS app's user interface, designed to engage users with sports awareness through gamification and social interaction.

- Welcome Screen:** Shows a large orange wheel with the text "Press The Wheel to earn a WELCOME prize". A smaller inset shows a preview of a team card with a "300 points" badge.
- Team Card:** Displays a team photo of a women's soccer team. Details include:
 - SPORT:** SOCCER
 - TOTAL PLAYERS:** 26
 - PLAYERS OWNED:** 2
 - POINTS EARNED:** 0A "Owned" button is visible at the bottom.
- Search Function:** A search bar at the top right leads to a "TEAM CARD" section showing a team photo, points earned (300), and players owned (2).
- Athlete Profiles:** Two profiles are shown:
 - Sascha Fleesler:** Position: GK, Class: 2026
 - Dika KC:** Position: M, Class: 2027
- Game Notifications:** A feed shows recent updates:
 - WELLESLEY vs WPI:** 0-5, LIVE, 38 minutes ago.
 - Sascha Fleesler:** Home game Tues, 4/15 @7pm vs WPI, 2 days ago.
 - WELLESLEY Go Blues!** You earned +20 points at the Softball spring opening!, 2 days ago.
 - WELLESLEY Go Blues!** You are now following Soccer!, 4 days ago.A message indicates "You do not have enough points to make another purchase" and encourages attending more games to earn points.
- Buy Items:** A section titled "\$ Buy items:" shows various items for purchase with "Buy: 200 pts" buttons, including a blue jersey, a blue wristband, and a blue cap.
- Purchase Dialog:** A central dialog box displays:
 - You currently have 300 points
 - You are making a purchase of 200 points
 - Points remaining: 100 ptsButtons for "Confirm" and "Cancel" are present.
- Athlete Card:** A section titled "ATHLETE CARD" lists profiles for:
 - Abby Couture:** Position: M, Class: 2025
 - Carrie Huang:** Position: M/F, Class: 2025
 - Michelle Lim:** Position: D, Class: 2025
 - Ariel Moncrief:** Position: F, Class: 2025
 - Juliana Mytko:** Position: M, Class: 2025
 - Jusrin Padam:** Position: M/F, Class: 2025

This project deepened my interest in how gamification and playful design can turn everyday digital experiences into spaces for motivation, belonging, and participation.

SCAFFOLDING COMPLEX CHOICE MAKING

TECHNOLOGY PROBE | GENERATIVE AI |

Virtual Assistant

Hey, help me find some classes!

⚡ by Botpress



Hello! 🌟 I'm CourseGPT, here to help you find and choose MIT classes, plan your schedule, and fulfill your degree requirements. How can I assist you today? For example, I can help you find classes by interest, department, time, or requirement, or give feedback on your courseload.

V

What is your class year? (e.g., 2026, 2027, first-year, sophomore, etc.)

V

I led a study exploring how AI-guided interfaces can support effective decision making in complex, multi constraint tasks such as university course registration. Through semi-structured interviews and surveys, I analyzed how students externalize decisions, manage trade-offs, and reconcile degree requirements with personal goals. From this analysis, I developed design principles for guided prompting interfaces. This work reframes AI as a scaffold for reflective reasoning, highlighting how design can promote agency and deeper engagement in academic planning.

The research hypothesizes that guided prompting interfaces can function as cognitive scaffolds that support reflective and effective decision-making in complex tasks like course registration by externalizing reasoning, reducing cognitive load, and fostering exploration across disciplinary boundaries. Scaffolds such as guided prompting can take a transformative approach when it comes to learning and reflection.

INTERACTIVE LANGUAGE ARTWORK

DIGITAL MEDIA | INTERACTIVE INSTALLATION | HAPTICS AND SENSORS



This poster is a vibrant fusion of Bollywood nostalgia and digital interaction, transforming cinematic culture into an experiential form of art. As an interactive installation, this piece reimagines how language can be interpreted through motion, touch, and digital augmentation. The layering of text in Hindi and English across the car's surface not only celebrates linguistic hybridity but also invites the audience to explore how emotional and cultural meanings shift when mediated through technology.

From an HCI (Human-Computer Interaction) perspective, this work exemplifies how design, technology, and storytelling can converge to deepen user engagement. By integrating interactive affordances audio and experiential design, the installation transforms a static visual into a participatory experience. It stands as a commentary on multimodal communication, where visual language, sound, and touch create new pathways of understanding cultural media.