UC Bearcat AI Grants Proposal

ID Student AI Agent: Personalizing Industrial Design Education

Submitted by: John Violette (Principal Investigator)

University of Cincinnati, College of Design, Architecture, Art, and Planning

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1 Project Summary

The ID Student AI Agent is an innovative, ethical AI-powered tool designed to personalize the educational journey of industrial design (ID) students at the University of Cincinnati (UC). Industrial design is a vast field, often overwhelming for students beginning their academic careers. This project proposes an interactive AI agent that assesses students' interests, skills, and goals to recommend tailored subfields (e.g., toy design, wearable technology), curates learning resources, and facilitates industry connections. By leveraging responsible AI, the agent enhances pedagogy through personalized learning strategies and improves student life by boosting engagement, academic performance, and career readiness. The project aligns with UC's mission to foster innovative, student-centered education and will deliver measurable outcomes, including increased retention and industry engagement, through a pilot implementation in the ID program.

2 Project Description

2.1 Background and Significance

Industrial design encompasses diverse subfields, from product design to emerging technologies, making it challenging for students to identify a focus. Traditional advising often lacks the granularity to apply individual interests to specific career paths. The ID Student AI

Agent addresses this gap by using ethical AI to deliver personalized guidance, drawing inspiration from personality sorters like MBTI but tailored to ID contexts. By integrating with UC's academic and career ecosystems, the agent supports students from matriculation to graduation, fostering engagement and success.

2.2 Objectives

- Develop an AI-driven assessment tool to recommend ID subfields based on students' interests and skills.
- Curate personalized learning resources and career pathways to enhance academic performance.
- Facilitate industry connections through ethical AI-driven networking tools.
- Evaluate the agent's impact on student engagement, retention, and career readiness.

2.3 Methodology

The project will be implemented in three phases over one year:

1. Development (June–August 2025): Design the AI agent, including an interest assessment module, resource database, and networking templates. Use Python and web technologies for a user-friendly interface. Ensure ethical AI practices, such as transparent algorithms and secure data handling.
2. Pilot Implementation (September–December 2025): Deploy the agent to 50 ID students in UC's College of DAAP. Collect feedback via surveys and focus groups to refine functionality.
3. Evaluation and Scaling (January–April 2026): Analyze outcomes using metrics like course completion rates, student satisfaction, and industry connections made. Prepare reports and symposium presentation.

2.4 Ethical AI Considerations

The agent will adhere to ethical AI principles:

- Transparency: Clearly explain how recommendations are generated.
- Fairness: Mitigate biases in subfield recommendations (e.g., avoiding gender stereotypes).
- Privacy: Use secure, anonymized data storage compliant with FERPA and GDPR.
- Accountability: Allow students to provide feedback to improve algorithms.

3 Pedagogy Focus

The ID Student AI Agent enhances pedagogy by:

- Personalized Learning: Recommends tailored curricula (e.g., courses in 3D modeling for toy design) based on AI-driven assessments, improving student motivation and learning outcomes.
- Improved Assessment: Tracks student progress through milestones (e.g., project completions), providing instructors with data to refine teaching strategies.
- Student Success: Curates resources like tutorials and case studies, enabling students to develop skills aligned with their goals, thus boosting academic performance.

By integrating with UC's learning management systems, the agent ensures seamless adoption by faculty, enhancing the educational experience while maintaining ethical AI standards.

4 Student Life Focus

The agent transforms student life at UC by:

- Enhanced Engagement: Offers interactive tools and gamified assessments to keep students motivated, increasing participation in ID-related activities.
- Academic Performance and Retention: Provides clear career pathways, reducing overwhelm and supporting persistence through tailored advising.
- Career Education: Facilitates networking with ID professionals via email templates and curated contact lists, preparing students for internships and jobs.
- Alumni Engagement: Connects students with UC alumni in ID fields, fostering mentorship and long-term community ties.

The agent's mobile-friendly interface ensures accessibility, enhancing student experiences across academic and social dimensions.

5 Expected Outcomes

- Quantitative: 10% increase in ID course completion rates; 80% student satisfaction rate; 20 industry connections per student.
- Qualitative: Improved student confidence in career choices; stronger faculty-student advising relationships; enhanced UC-industry partnerships.

6 Timeline

- June–August 2025: Develop AI agent and resource database.
- September–December 2025: Pilot with 50 students; submit mid-year report by November 14, 2025.
- January–February 2026: Evaluate pilot; present at UC AI & Emerging Tech Symposium (February 2026, TBD).

- March–April 2026: Finalize evaluation; submit end-of-year report by April 17, 2026.

7 Budget

Total request: $5,000

- Personnel ($3,000): Salaries for AI developer (10 hours/week, 3 months) and one student assistant.
- Technology ($1,000): Minimal cloud hosting and open-source software for agent deployment.
- Resources ($500): Freely available tutorials and minimal costs for symposium presentation.
- Evaluation ($500): Basic survey tools and minimal incentives for focus groups.

8 Qualifications

- John Violette (PI): Adjunct Professor of Industrial Design at UC DAAP, with 26 years of professional design experience across the Footwear, Toy, Entertainment, and Product Design industries, expertise in developing AI techniques and implementation, and a track record of mentoring students and interns in career development.

9 Conclusion

The ID Student AI Agent leverages ethical AI to revolutionize industrial design education at UC, aligning with the Bearcat AI Grants' focus on pedagogy and student life. By personalizing learning, enhancing engagement, and fostering industry connections, the agent will empower students, strengthen UC's ID program, and set a model for AI-driven education. We respectfully request funding to bring this transformative vision to life.