

# Cole Biehle

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## EDUCATION

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### Carnegie Mellon School of Computer Science

*Master of Human-Computer Interaction*

Pittsburgh, PA

Aug 2026

- **Selected Coursework (Completed & Planned):** DevOps: Engineering for Secure Development and Deployment, Introduction to Deep Learning, Programming Interactive Experiences, Interactive Data Science, Prototyping Algorithmic Experiences, Human AI Interaction, User-Centered Research and Evaluation, AI Venture Studio, AI Augmented Designer

### University of California, San Diego

*Bachelor of Science in Cognitive Science (Specialization in Design & Interaction)*

*Minor in Computer Science*

La Jolla, CA

Jun 2022

- **Selected Coursework:** Advanced Data Structures, Object-Oriented Programming, Computer Organization & Systems Programming, Discrete Mathematics, Linear Algebra, Data Science, Software Tools & Techniques Lab, Prototyping, Practicum in Professional Web Design, Engineering Psychology, Startup Studio, Social Computing

## RESEARCH EXPERIENCE

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### Carnegie Mellon University, Kittur Lab | Research Assistant (PI: Dr. Niki Kittur)

*Supported by Toyota Research Institute*

Pittsburgh, PA

Aug 2025 - Present

- Executed a deep qualitative study on R&D professional interviews to systematically identify structural and cognitive bottlenecks in organizational ideation workflows.
- Derived functional and technical requirements from research findings to inform the design specifications of novel AI-augmentation tools , setting the groundwork for validation through strategic pilot partnerships.

### UC San Diego, ProtoLab | Research Assistant (PI: Dr. Steven Dow)

*Supported by NSF Award #2009003*

La Jolla, CA

Jan 2024 - Present

- Designed and engineered a multi-agent LLM-driven system using React to model diverse perspectives and evaluate cognitively-informed scaffolding in augmenting academic writing. Research prepared for submission to UIST 2026.
- Executed a mixed-methods analysis on 172 participants, investigating the impact of LLM-driven conversational cues on group ideation quality and conversational divergence. Accepted to Collective Intelligence (CI) 2025.
- Conceptualized and designed a crowdsourcing system (first-author paper) to integrate data validation into news platforms, facilitating data-driven public discourse and collective sensemaking. Accepted at Computation + Journalism (C+J) 2024.

### UC San Diego, HXI Lab | Research Assistant (PI: Dr. Nadir Weibel)

*Supported by Lytx, Inc.*

La Jolla, CA

Jan 2025 - Present

- Executed a large-scale empirical Qualtrics study (n=200) with an industry partner to analyze organizational knowledge transfer barriers and improve commercial road safety. First-author research prepared for submission to L@S 2026.
- Quantitatively evaluated manager-led coaching initiatives, achieving a 24% improvement in driving behavior and a 50% reduction in hazardous incidents compared to passive methods.
- Analysis demonstrated improvements in 7 out of 12 core driving behaviors, validating the efficacy of scalable, resource-intensive knowledge-sharing techniques.

### UC San Diego, ProtoLab | Associate Researcher (PI: Dr. Steven Dow)

*Supported by NSF Award #2009003*

La Jolla, CA

Jul 2022 - Sep 2022

- Conducted mixed-methods analysis of participation dynamics across in-person and remote learning contexts, developing a Python script to code and quantify turn-taking patterns across 30+ hours of classroom recordings (n=80 students).

## PUBLICATIONS

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[\*\*Participatory Journalism: Stakeholder Perspectives on Enhancing Online Discussion through Data Talk.\*\*](#) Cole Biehle, Irigireddy, L Sun, SP Dow. In *Proceedings of the Computation + Journalism Symposium (C+J 2024)*. (First Author)

[\*\*Cueing the Crowd: LLM-Driven Conversational Cues Across Different Meeting Modalities Increase Topical Diversity of Generated Ideas.\*\*](#) JA Rayan, S Jiang, N Balaji, J Wang, I Gross, Cole Biehle, SP Dow. In *Proceedings of the ACM Conference on Collective Intelligence (CI 2025)*.

**Comparative Effectiveness of Coaching Modalities in Commercial Fleet Operations.** N Weibel, M Yarmand, **Cole Biehle**, E Mac, H Lu, V Xiang, G Strudler, P Strudler. *eScholarship Technical Report 2025*.

**Evaluating and Optimizing Coaching Methodologies for Fleet Safety and Performance: An Evidence-Based Analysis of Differentiation and Optimization Opportunities.** N Weibel, M Yarmand, **Cole Biehle**, E Mac, H Lu, V Xiang. *eScholarship Technical Report 2025*.

## PRESENTATIONS

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<b>Computation + Journalism Symposium</b>   Paper Presenter (First Author) <i>Crowdsourcing to Support Data-Talk</i>	<b>Boston, MA</b> Oct 2024
<b>Mindswarms Tech Series</b>   Speaker <i>Analysis &amp; Insight Generation: Best Practices for Research Translation</i>	<b>San Francisco, CA</b> Jan 2023
<b>UC San Diego Design Lab</b>   Industry UXR Panelist <i>Translating Academic Research to Industry Applications</i>	<b>La Jolla, CA</b> Jul 2023
<b>UC San Diego's ACM</b>   Industry UXR Panelist <i>Connecting HCI Research to Business &amp; Engineering Strategy</i>	<b>La Jolla, CA</b> Jun 2025
<b>Cognitive Science Student Association</b>   Industry UXR Panelist <i>HCI &amp; Research Opportunities in Tech</i>	<b>La Jolla, CA</b> May 2025
<b>Design Co</b>   Industry UXR Panelist <i>Framing Research and Design Impact</i>	<b>La Jolla, CA</b> Jun 2025
<b>COGS 127 Course</b>   Guest Lecturer (UXR Spotlight) <i>Navigating a Research Career in HCI</i>	<b>La Jolla, CA</b> Mar 2025

## TEACHING EXPERIENCE

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<b>Carnegie Mellon University, HCI Institute</b>   Graduate Teaching Assistant <i>The AI Augmented Designer</i>	<b>Pittsburgh, PA</b> Spring 2026
• Designed rigorous evaluation rubrics for projects on human-AI collaboration and the technical outputs of generative design.	
• Led studio critiques and synthesized feedback on prompt engineering, system architecture, and interaction design for LLM- and diffusion-model-based tools, translating algorithmic concepts into viable product solutions.	
• Mentored 50 students on research-through-design methods, guiding iterative prototyping of AI-augmented creative tools.	
<b>UC San Diego, Cognitive Science Department</b>   Undergraduate Teaching Assistant <i>Social Computing</i>	<b>La Jolla, CA</b> Spring 2022
• Led weekly discussion sections for 30+ students, facilitating analysis of literature on collaborative system design principles.	
• Managed operations and mentored 80 students (20 teams), guiding methodology application from problem identification to product launch.	
<i>Start-up Studio</i>	Winter 2021
• Co-developed course materials for end-to-end product development, emphasizing design thinking and iterative prototyping.	
• Managed operations and mentored 80 students across 20 teams, guiding from problem identification to product launch.	
<i>Cyborgs Now and Into The Future</i>	Fall 2021
• Designed assignments bridging distributed cognition theory and HCI applications, focused on human-technology integration.	
• Supported lectures for 200+ students and provided substantive project feedback on speculative emerging technology.	

## INSTRUCTIONAL MENTORSHIP

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<b>UC San Diego, The Basement (Blackstone Launchpad Incubator)</b>   Mentor	<b>La Jolla, CA</b> Sep 2024 - Present
• Appointed for entrepreneurial excellence to mentor 10+ startup teams in translating user insights to product strategy.	
• Guidance focused on research rigor and implementing UX research and design methodologies for product decision-making.	
<b>UC San Diego, The Design Lab</b>   Curriculum Developer & Instructional Mentor	<b>La Jolla, CA</b>

Jun 2024 - Mar 2025

- Spearheaded the pedagogical redesign of a competitive two-year curriculum, developing content grounded in design thinking.
- Integrated learning progressions featuring industry collaborations and critiques with global design leaders.
- Mentored 15+ students through end-to-end design projects, covering user research, prototyping, and evaluation.

## UC San Diego, Cognitive Science Department | Curriculum Researcher

La Jolla, CA

Jan 2024 - Aug 2025

- Established the UCSD Design Lab Alumni Network and proposed data-driven curriculum reforms (with Dr. Scott Klemmer) to the Cogs Department, advocating for increased CS requirements based on empirical analysis of 100+ graduate surveys.

## INDUSTRY EXPERIENCE

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### Cole-Powered Innovations, LLC | Founder & CEO

San Diego, CA

Dec 2023 - Present

- Founded an innovation consultancy for Fortune 500 clients, driving an estimated \$3.5M strategic impact across 20+ projects.
- Mentored 50+ startups on research rigor and product-market fit, leading to 200% co-founder matching, securing \$150k+ pre-seed funding, and acceptance into incubators (e.g., Blackstone Launchpad).

### Mindswarms (Video Survey Platform) | UX Research Consultant

San Francisco, CA

Clients: Google, Amazon, Microsoft, Nike, American Express

Sep 2022 - Feb 2025

- Conducted 15+ high-stakes research studies to guide product strategy for platforms serving billions of daily users.
- Engineered an internal analysis tool that reduced video review time by 30%, significantly enhancing research efficiency.

#### Selected Project Highlights:

##### Google (Pixel, Search, Lens, Assistant, YouTube, Ads, Earth Engine)

- Synthesized user research from early AI concept tests into actionable design and resource guidance for 10+ product teams.
- Directly influenced strategic roadmaps, ensuring resource dedication for critical features like mitigating Pixel frustration of gesture navigation by 25%, improving Lens accessibility by 50%, and launching the 'What people are saying' Search pill.

##### Amazon (Halo)

- Designed a multi-purpose screener that segmented 40+ users and captured early prototype reactions, accelerating strategic feedback delivery by 6 weeks and overall cutting the potential software iteration time in half.

##### Microsoft (Teams)

- Salvaged international feature research via deep qualitative analysis of corrupted interview data (10% of footage), delivering critical insights that informed essential refinements for real-time, multi-language translation and mitigated launch risk.

##### Nike (Nike, SNKRS, NTC, NRC)

- Led end-to-end research design on 100+ consumers, prototyping online ads across four apps and providing a comprehensive consumer landscape that informed the direction of a multi-million dollar in-store apparel campaign.

##### American Express

- Moderated interviews and analyzed artifacts from 80+ participants, delivering insights that shaped cardholder acquisition features and provided strategies to increase the conversion rate of low-income households by 3x.

### Zelig (GenAI Startup for Virtual Fashion) | UX Research Lead

Beverly Hills, CA

Jun 2023 - Dec 2023

- Drove the strategic narrative and was instrumental in securing a successful \$15M Series A raise at \$100M valuation, presenting GenAI product strategy and user findings to investors and the board of directors.
- Led an end-to-end mixed-methods research program (n=50 interviews, n=200 surveys) and competitive analysis (30+ companies) to define product-market fit for AI fashion tools, ensuring successful positioning within the luxury goods sector.
- Translated research insights into a prioritized feature framework, aligning the product roadmap and directing cross-functional engineering and design collaboration to accelerate prototyping and ship time by 40%.

### UC San Diego, Design Lab | Research Project Manager & Developer

La Jolla, CA

Jun 2024 - Mar 2025

- Led Information Architecture redesign and development of the Design Lab website, improving accessibility and discoverability by 250% for 2,000+ students. <https://designlab.ucsd.edu/>
- Designed and launched a housing-focused challenge, developed the website and received 50+ proposals from organizations and schools; allocated \$5,000+ in funding and facilitated mentorship for implementation. <https://d4sd.org/>
- Developed a storytelling platform (Svelte, Firebase) for a community-engaged research project on housing insecurity, enabling 10+ unhoused individuals to express lived experiences in public discourse. <https://storiesunsheltered.ucsd.edu/>

- Synthesized 100+ responses from design leaders across 20+ countries at the Design Policy Conference to develop a strategic framework for democratizing design practice in government, education, and business sectors.

## Startups (Flock & Crib) | Founder & CEO

- Accepted into Blackstone Launchpad Incubator (x2) and StartR Inclusion+Impact Incubator.

**La Jolla, CA**  
Sep 2022 - May 2024

## HONORS & AWARDS

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<b>Finalist</b> , Global Challenge Lab (Design Challenge)	2024
<b>Provost Honors</b> , UC San Diego	2019-2022
<b>Warren College Honors Society</b> , UC San Diego	2019-2022
<b>Honorable Mention</b> , Mindshifts on Megafire (Design Challenge)	2022

## SERVICE & LEADERSHIP

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<b>Collective Intelligence 2025</b>   Website Co-Chair <i>Development of the Official Conference Website: <a href="https://ci.acm.org/2025/">https://ci.acm.org/2025/</a></i>	<b>La Jolla, CA</b> July 2025 - Aug 2025
<b>CMU SCS Master's Student Advisory Committee</b>   Student Representative <i>Strategic Integration of Computer Science Graduate Programs</i>	<b>Pittsburgh, PA</b> Aug 2025 - Present
<b>UI for AI</b>   Researcher <i>AI Design Principles for Practitioners: <a href="https://medium.com/ui-for-ai">https://medium.com/ui-for-ai</a></i>	<b>Pittsburgh, PA</b> Aug 2025 - Present
<b>UC San Diego, The Basement's Demo Day</b>   Master of Ceremonies <i>Yearly Office of Innovation &amp; Commercialization Showcase</i>	<b>La Jolla, CA</b> Jun 2025
<b>School of Young Entrepreneurs</b>   Instructor <i>Workshops on Design Thinking Methodology</i>	<b>La Jolla, CA</b> Jul 2024 & Jul 2025
<b>UC San Diego, Triton Tank</b>   Startup Pitch Judge <i>Bi-yearly Office of Innovation &amp; Commercialization Pitch Competition</i>	<b>La Jolla, CA</b> Sep 2024
<b>Design for America</b>   Industry Judge <i>Student's Final Projects - Product Design</i>	<b>La Jolla, CA</b> Jun 2025
<b>UC San Diego, Cognitive Science Department</b>   Final Project Judge (x2) <i>Student's Final Projects - Product Design</i>	<b>La Jolla, CA</b> Jun 2024 & Jun 2025
<b>UC San Diego, The Design Lab</b>   Lead Volunteer <i>Grand Opening of the Design Innovation Building</i>	<b>La Jolla, CA</b> Nov 2021

## SKILLS

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**Programming Languages:** Python, React, JavaScript, HTML/CSS, C/C++, Java

**Machine Learning:** CNN, LLMs, SVM, KNN, Naive Bayes, Decision Trees, Regression Models

**Data & Development Tools:** PyTorch, Scikit, Pandas, NumPy, Node.js, npm

**Research Methodology:** Experimental Design, Statistical Modeling, Thematic Analysis, System Evaluation, Usability Testing, A/B Testing, User Testing Moderation, Qualtrics, Competitive Analysis

**Design & Collaboration Tools:** Figma, Prototyping, Information Architecture, Web/App Development, Adobe Creative Suite, Apple HIG, Google Material Design, IBM Carbon