

# Ariel Han

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 Department of Informatics, University of California, Irvine

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## EDUCATION

University of California, Irvine, CA Sept. 2019 - present  
**Ph.D. Informatics**

Carnegie Mellon University, PA Aug. 2011 - Feb. 2013  
**M.S. Entertainment Technology**

Seoul National University, Seoul, South Korea Mar. 2005 - Feb. 2011  
**B.A. Information Technology,**  
**B.F.A. Industrial Design, Fine arts**

## RESEARCH EXPERIENCE

**StoryAI Project Lead (2021-Present)**, Department of Informatics, UC Irvine

*“StoryAI: visual-story co-creation app with AI generator”*

Actively designing, developing, and evaluating AI-powered tools to support literacy and creative expression through interactive visual story creation using generative AI for youth ages 6 to 10. We examine the effectiveness and validity of learning apps, child-AI interaction, and collaboration strategies

- Design and develop a prototype using OpenAI GPT-3, Vue.js
- In-progress in the [VITAL Prize challenge](#) (NSF sponsored) funded project, received \$20,000

**Graduate Researcher (2021-2022)**, Department of Informatics, UC Irvine, Creativity Labs, C-Accel *“Future of Work at the Human-Technology Frontier”* Funded by National Science Foundation (#1839896)

Investigators: Dr. Karthik Ramani, Purdue University; Dr. Kylie Peppler, University of California, Irvine; Daron Acemoglu, Massachusetts Institute of Technology.

- Conducted user-testing (focus group workshops), planning and creating workshop settings
- Writing literature reviews to support writing publishable papers
- Conducted mixed-method research with video, audio transcripts and pre-post test data
- Data analysis with video data (qualitative) as well as pre-post tests data (quantitative: SPSS)

**Graduate Researcher (2019-2021)**, Department of Informatics, UC Irvine, Creativity Labs, AISL CNS *“Data Visualization Literacy: Research and Tools that Advance Public Understanding of Scientific Data”* Funded by National Science Foundation (#1713567)

Investigators: Katie Börner, Kylie Peppler, Bryan Kennedy, Stephen Uzzo, and Joe Heimlich, Indiana University, 2019-2020.

- Conducted data analysis (thematic analysis) in part of qualitative research including semi-structured interviews, video data, transcripts of user experience

- Literature reviews in collaborative writing process submitting various publication venues

**Research Assistant intern (2018-2019)**, The Concord Consortium, Emeryville, CA

“Paper Mechatronics: A new interdisciplinary design medium combining traditional papercrafting with elements of mechanical design, electronic engineering, and computational thinking” Funded by National Science Foundation (#1713567)

Investigators: Sherry Hsi (PI), Mike and Ann Eisenberg (Co-PI's), /at CU Boulder, 2017-2019 & 2014-2016

- Conducted experiments in workshop settings with 30 teachers
- Conducted series of studies in libraries with surveys, interviews and video recorded

**Researcher and Interaction Designer (2012-2013)**, Carnegie Mellon University, PA

“Digital Dream Lab: Teaching kids a basic concept of coding with interactive digital media in the Children’s museum”

- Conducted a series of user tests at the museum and implemented in iterative design development

## PUBLICATIONS

- [P15] **Han, A.**, Zhou, X., Cai, Z., Han, S., Ko, R., Corrigan, S., & Peppler, K. (2023). Teachers, Parents, and Students' perspectives on Integrating Generative AI into Elementary Literacy Education. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '23*. (Under review)
- [P14] Lee, U., **Han, A.**, Lee, J., Kim, J., Lee, E., Kim, H., & Lim, C. (2023). Prompt Aloud!: Incorporating image-generative AI into STEAM class with learning analytics using prompt data. *Education and Information Technologies*.  
<https://doi.org/10.1007/s10639-023-12150-4>
- [P13] Lee, U., **Han, A.**, Lee, J., Kim, J., Lee, E., Kim, H., & Lim, C. (2023). Implication of a Case Study using Generative AI in Elementary School: Using Stable Diffusion for STEAM Education. *Association for Educational Communications & Technology (AECT)*.
- [P12] **Han, A.**, & Cai, Z. (2023). Design implications of generative AI systems for visual storytelling for young learners. *Interaction Design and Children*  
<https://doi.org/10.1145/3585088.3593867>.
- [P11] **Han, A** (2023). Implications of AI art generators to broaden visual literacy and creative expression for young learners *International Society of the Learning Sciences (ISLS) Annual Meeting 2023*. International Society of the Learning Sciences.
- [P10] **Han, A.**, Cai, Z., Jeong, S., & Choi, S. M. (2023). AIStory: design implication of using generative arts AI for visual storytelling. *Child-Centered AI Design: Definition, Operation, and Considerations ACM CHI 2023 Workshop*.
- [P9] Huang, J., **Han, A.**, Villanueva, A. M., Liu, Z., Zhu, Z., & Ramani, K. Peppler, K., A., (2023). Deepening Children’s STEM Learning through Making and Creative Writing. *In*

*Proceedings of the 2023 International Journal of Computer Child Interaction, IJCCI*

- [P8] **Han, A.**, Huang, J., Villanueva, A. M., Peppler, K. A., Liu, Z., Zhu, Z., & Ramani, K. (2022). Coding a MacGuffin: Recommendations for Teaching Narrative-based IoT Design. In *Proceedings of the 2022 American Educational Research Association (AERA)*
- [P7] **Han, A.**, Keune, A., Huang, J., & Peppler, K., (2022). Visualizing Family Engagement in Museum Settings. In: J. Oshima, T. Mochizuki, & Y. Hayashi (Eds.) *International Collaboration toward Educational Innovation for All: International Society of the Learning Sciences (ISLS) Annual Meeting 2022 (pp. 1094-1095)*. Hiroshima, Japan: International Society of the Learning Sciences.
- [P6] Huang, J., **Han, A.**, Sedas, M., Telfer-Radzatz, K., & Peppler, K., (2022). Crafting paper circuits: Gendered materials for circuitry learning. In J. Oshima, T. Mochizuki, & Y. Hayashi (Eds.) *International Collaboration toward Educational Innovation for All: International Society of the Learning Sciences (ISLS) Annual Meeting 2022*. Hiroshima, Japan: International Society of the Learning Sciences.
- [P5] Peppler, K., Keune, A., & **Han, A.** (2021). Cultivating data visualization literacy in museums. *Information and Learning Sciences*, 122(1/2), 1–16.  
<https://doi.org/10.1108/ILS-04-2020-0132>
- [P4] Peppler, K., Keune, A., & **Han, A. J.** (2020). Civic engagement with visualizing data in science museums. In M. Gresalfi & I. Horn (Eds.), *The interdisciplinarity of the learning sciences: International Conference of the Learning Sciences (ICLS) 2020*. Nashville, TN: International Society of the Learning Sciences.
- [P3] Peppler, K., Keune, A., & **Han, J.A.** (July 2020). Data Visualization Exploration in Science Museums. *Connected Learning Summit (CLS), July 29-31, 2020, Cambridge, MA*.
- [P2] Peppler, K., Keune, A., & **Han, A. J.** (2019) AISL II CNS Phase 1 Learning Science Research Report. Project deliverable for National Science Foundation project #1713567.
- [P1] Oh, H., Deshmane, A., Li, F., **Han, J. Y.**, Stewart, M., Tsai, M., ... & Oakley, I. (2013, February). The digital dream lab: tabletop puzzle blocks for exploring programmatic concepts. In *Proceedings of the 7th International Conference on Tangible, Embedded and Embodied Interaction (TEI '13)*. Association for Computing Machinery, New York, NY, USA, 51–56. <https://doi.org/10.1145/2460625.2460633>

## TEACHING EXPERIENCE

### Informatics, University of California, Irvine, Teaching Assistant Graduate Courses (MHCID)

- Innovations in HCID – Summer 2023 (Prof. Mark S Baldwin)

- Overview of HCID - Spring 2023 (Prof. Mark S Baldwin)
- Design and prototype – Fall 2022 (Prof. Anne Marie Piper)

### **Undergraduate Courses (ICS & Informatics)**

- Human Computer Interaction (HCI) – Spring 2022 (Prof. Gloria Mark)
- Ubiquitous Computing - Winter 2022 (Prof. Kylie Peppler)
- Design and prototype – Fall 2021 (Prof. Sarah Murray)
- Ubiquitous Computing - Winter 2020 (Prof. Kylie Peppler)
- HCI Project - Spring 2020 (Prof. Matt Bietz)

## **PROFESSIONAL EXPERIENCE**

### **The Concord Consortium, Emeryville, CA, 2018**

*Research assistant intern*

Contributing to develop lesson plans and tutorials for the educational toolkit, Paper mechatronics for creative design and engineering education

### **42 Silicon Valley Software engineering school, Fremont, CA, 2016 - 2019**

*Software engineer*

Developing web applications, projects in commercial website and educational applications.

### **Edlab Teachers College Columbia University, New York, NY, May. 2013 - Aug. 2013**

*Data visualization design intern*

Created data visualization using the usage metrics of the Edlab product, New Learning times, educational journal website.

### **The Children's Museum of Pittsburgh, Pittsburgh, PA, Jan. 2011 - May. 2012**

*Interaction Designer*

Designed and fabricated an exhibition of educational interactive media for children in the museum. Conducted user studies and qualitative studies including interviews and ethnographic studies at the museum.

### **Hyundai Motor Company, Seoul, South Korea, May 2009 - Sep. 2009**

*Exterior Design intern*

Created a futuristic, environmentally friendly concept vehicle mock-up in digital and physical form and exhibited in the lab.

## **PROJECT**

### **Xenon – Carnegie Mellon University | Electronic Arts, Redwood City, CA, 2013**

Designed future technologies for humans in communication. Research about Augmented Reality, vehicle quadcopter, wall display.

Created a video about the persona who use the AR technology and interactive wall screen with the vehicle quadcopter in daily life

### **Digital Dream Lab — CMU | Pittsburgh Children's Museum, Pittsburgh, PA, 2012**

Designed and fabricated an exhibition for the Children's Museum Makeshop area.

The installation includes a interaction tangible programming interface for 4 to 8

year old with puzzle blocks to introduce computational thinking and basic programming concept. Each block links as a function on the screen of the wall. Kids can manipulate characters, actions, animations while playing with the blocks on the table.

## WORKSHOPS

**Paper Mechatronics with Tinkering Studio, Exploratorium** | San Francisco, CA | Nov 2018  
Ran a tinkering workshop with Bay Area Maker Education group for testing Paper Mechatronics project

**Paper Mechatronics, STEM activity, Union City Library** | Union City, CA | Oct 2018  
Ran a STEM activity for age 8 to 12 about teaching mechanical movement with paper crafting

**Scratch coding workshop** | Walnut Creek, CA | May 2018  
Taught scratch programming language to children age 5 to 8 through creating simple animation

**STEM Lab Activity, Palo Alto City Library** | Palo Alto, CA | Oct 2018  
STEM activity to teach simple engineering concept through crafting age 5 to 8

## HONORS AND AWARDS

**Proof of Product (PoP) Grants (UCI) | 2023 (In-progress)**  
Artificial Intelligence Track (\$100,000)

**VITAL Prize Challenge (NSF) | 2023 (In-progress)**  
Semi-Finalist, \$35,000 (Received)  
Team StoryAI (Team lead. **Ariel Han**, Kylie Pepler Shenshen Han, and Seth Corrigan)

**UCI Beall Applied Innovation's (BAI) | 2023**  
PhD Graduate Innovation Fellowship \$5,000  
Transitioning research project to entrepreneurship)

**National Global Scholarship from Ministry of Culture, Sports and Tourism of Korea** | 2011  
Received \$27,090 for the master's degree of Entertainment Technology at Carnegie Mellon University from Korean government organization, KOCCA (Korea Creative Content Agency)

**Walt Disney imagineering** | Semi Finalist | 2012  
Designed a theme park experience in virtual space

**Korea Institution of Design** | Interaction Design Award | 2011  
Space design competition in Seoul, Korea  
Re-designed a historic place in Seoul

**Research Assistant Scholarships, Seoul National University** | Industrial Design | 2010  
Research project working with the Hyundai Motor Company

Designed and exhibited futuristic concept car

**Visiting Student Program Scholarships, Tsinghua University, Beijing, China** | Environment Design | 2009

Summer visiting workshop and design competition for the space design  
Studying materials for the interior design

## Review Experience

**UIST 2023**

**IJCCI 2023**

**New Media & Society 2024**

**CHI 2024**

## MEMBERS

International Society of the Learning Sciences (ISLS)

Connected Learning Summit (CLS)

Association for Computing Machinery (ACM)

Interaction Design Association (IXDA)

## MENTOR SERVICE

**Zhenayo Cai**, PhD student, UCI School of Education, [zhenyaoc@uci.edu](mailto:zhenyaoc@uci.edu)

**Uliah Zaman**, Undergraduate student, UCI ICS, LEAD program, [uzaman@uci.edu](mailto:uzaman@uci.edu)

**Seungmin Jeong**, Master student, UCI, Informatics, [jsm772x@gmail.com](mailto:jsm772x@gmail.com)

**Ray An**, Undergraduate student, UCI ICS, [hsrayan05@gmail.com](mailto:hsrayan05@gmail.com)

## REFERENCES

<b>Advisor</b>	<b>Kylie Peppler</b>	<a href="mailto:kpeppler@uci.edu">kpeppler@uci.edu</a>
<b>Advisor</b>	<b>Seth Corrigan</b>	<a href="mailto:scorrigl@uci.edu">scorrigl@uci.edu</a>
<b>Mentor</b>	<b>Joey Huang</b>	<a href="mailto:chujenh@uci.edu">chujenh@uci.edu</a>
<b>Committee</b>	<b>Katie Salen</b>	<a href="mailto:ksalen@uci.edu">ksalen@uci.edu</a>
<b>Committee</b>	<b>Kurt Squire</b>	<a href="mailto:ksquire@uci.edu">ksquire@uci.edu</a>

## SKILLS

**Programming Languages**

**Design Tools**

**UX design**

**User Experience Research**

C, JavaScript, SQL, PHP, Python, HTML, CSS

Adobe illustrator, Photoshop, Maya, Unity

Sketch, Adobe XD, Figma

Usability Studies, Iterative Design, Prototype, Qualitative research methods (interviews, field study), Surveys