Ariel Han

(412) 608-2665 | hanjy3@uci.edu | arielhan.com
Department of Informatics, University of California, Irvine

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
"*AI Story: 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) funded project, received $35,000

Graduate Researcher (2021-Present), 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-Radzat, 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 Peppler 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
Ulia Zaman, Undergraduate student, UCI ICS, LEAD program, uzaman@uci.edu
Seungmin Jeong, Master student, UCI, Informatics, jsm772x@gmail.com
Ray An, Undergraduate student, UCI ICS, hsrayan05@gmail.com

REFERENCES

Advisor	**Kylie Peppler**	kpeppler@uci.edu
Advisor	**Seth Corrigan**	scorrig1@uci.edu
Mentor	**Joey Huang**	chujenh@uci.edu
Committee	**Katie Salen**	ksalen@uci.edu
Committee	**Kurt Squire**	ksquire@uci.edu

SKILLS

Programming Languages	C, JavaScript, SQL, PHP, Python, HTML, CSS
Design Tools	Adobe illustrator, Photoshop, Maya, Unity
UX design	Sketch, Adobe XD, Figma
User Experience Research	Usability Studies, Iterative Design, Prototype, Qualitative research methods (interviews, field study), Surveys