

Kazuhiko Momose, Ph.D.

Gateway Software Tools Design Engineer
Amentum
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[LinkedIn](#) | [Portfolio](#)

Education	<i>Ph.D. Human-Centered Design</i> Florida Institute of Technology, Melbourne, FL	Aug. 2020 - Dec. 2024
	<i>M.S. Space Architecture</i> University of Houston, Houston, TX	Aug. 2017 - Dec. 2018
	<i>B.S. Aerospace Engineering</i> Nihon University, Tokyo, Japan	Apr. 2013 - Mar. 2017
Work Experience	<i>Gateway Software Tools Design Engineer</i> Amentum, Houston, TX	Dec. 2024 - Present
	<ul style="list-style-type: none">Working on the design and development of a ground tool software for Gateway	
	<i>Human Factors Software Engineer Intern</i> Jacobs Technology, Inc., Houston, TX (Summer Intern)	May 2024 - Aug. 2024
	<ul style="list-style-type: none">Applied human factors methodologies, including Hierarchical Task Analysis to various tasks performed in GatewayDesigned a pilot human-in-the-loop testing protocol to identify potential improvements in verification and validation process of Gateway	
	<i>Summer Software Engineering Intern</i> Institute for Human & Machine Cognition (IHMC), Pensacola, FL (Summer Intern)	May 2023 - Aug. 2023
<ul style="list-style-type: none">Conducted heuristic evaluations of the existing UI design of desktop software and VR for humanoid robot teleoperationLed a feasibility study on the proposed approach to teleoperating a humanoid robot via VR controlReported UI and human-robot teamwork design in IEEE Robotics and Automation Letters (RA-L) as the second author		
<i>User Experience (UX) Researcher</i> Dassault Systèmes Simulia, Johnston, RI (Summer Intern Remote Role)	May 2022 - Aug. 2022	
<ul style="list-style-type: none">Captured users' thoughts and feelings during workflow assessments of engineering simulation softwareOrganized observations and identified problems to solve gained from workflow assessments and develop journey mapsConducted internal stakeholder interviews about data analytics to identify metrics that they would like to keep track of to make informed decisions on daily tasks		
<i>Graduate Research Assistant</i> Florida Institute of Technology, Human Spaceflight Laboratory, Melbourne, FL	Aug. 2020 - May 2022	
<ul style="list-style-type: none">Conducted an experiment for Task 398 Human Input Systems for Commercial Space Transportation funded by FAA		

- Developed browser-based Fitts' Law experiment for evaluating 4 input devices
- Analyzed experiment results using R and established design recommendations for control systems and interfaces for Commercial Space Transportation industry

Engineer Aug. 2019 - Jul. 2020
Space Systems Development Corporation, Tokyo, Japan

- Conducted Japan Aerospace Exploration Agency (JAXA)-supported research on how we could utilize human spaceflight assets for improving disaster prevention and management in Japan
- Assisted multiple human spaceflight-related projects such as 3D visualization of lunar and Mars bases

Research Assistant Jun. 2018 - Dec. 2018
University of Houston, Houston, TX

- Conducted Gateway operations and habitability study in support of the Boeing Company in response to NASA Broad Agency Announcement
- Proposed alternative mission planning, operation strategy, and habitat design by considering a set of Figures of Merit, such as launch requirements, maintainability, and growth potentials

Additional Experience

Human-Centered Design (HCD) Consultant Nov. 2021 - May 2022
Health First, Melbourne, FL

- Interviewed medical personnel in Intensive Care Unit/Progressive Care Unit departments to identify potential pain points
- Ideated solutions for improving patients' experience during hospital discharge process in collaboration with Health First

Delegate Nov. 2020
[Asia-Pacific Space Generation Online Workshop 2020](#), Online

- Participated in a four-day online workshop to discuss pertinent issues in the Asia-Pacific region as a delegate
- Contributed to working group discussion; *Cooperation (and Capacity-building) of Asia-Pacific Countries for Space Exploration*

Guest Researcher Mar. 2020 - Aug. 2020
University of Bremen, Bremen, Germany (Remote)

- Collaborated with University of Bremen Center of Applied Space Technology and Microgravity (ZARM) on [Project Moon and Mars Base Analog \(MaMBA\)](#)
- Established baseline design recommendations for MaMBA medical bay architecture based on a literature review of existing medical standards and guidelines

Delegate Nov. 2019
[6th Asia-Pacific Space Generation Workshop](#), Nagoya, Japan

- Participated in a two-day workshop to discuss pertinent issues in the Asia-Pacific region as a delegate
- Contributed to working group discussion; *Robotics as a precursor to return to the Moon*

Research Volunteer May. 2019 - Aug. 2019
Florida Institute of Technology, Melbourne, FL

- Volunteered conceptual design of cis-lunar personal orbital medical system at Florida Institute of Technology
- Assisted in mockup construction of personal orbital medical system by designing and producing 3D-printed supplemental mockup parts

Project Team Member Aug. 2017 - Dec. 2018
Mars Habitat Mockup Construction at Houston Community College, Houston, TX

- Proposed a conceptual design of a Mars habitat that could be operational in both microgravity and Martian gravity conditions
- Constructed a full-size mock-up of a segment of the Mars Habitat in collaboration with Houston Community College for [Mars Exploration in the 21 Century: STEM Approach Symposium](#)

Project Manager Dec. 2015 - Sep. 2016
Mars Society's International Gemini Mars Design Competition, Washington D.C.

- Led multi-university design team as project manager for Mars Society's mission design competition and won the second place out of 10 finalists (see [Mars Society's Announcement](#))
- Ran simulation of crewed re-entry vehicle and performed mission cost analysis

Publications

See also [my Google Scholar](#) page.

Journal Articles

3. **Kazuhiko Momose**, Rahul Mehta, Josias Moukpe, Troy Weekes, Thomas Eskridge, 2024. Human-AI Teamwork Interface Design Using Patterns of Interactions. *International Journal of Human-Computer Interaction*, 1-24
2. Luigi Penco, **Kazuhiko Momose**, Dexton Anderson, Nicholas Kitchel, Duncan Calvert, and Robert Griffin. 2024. Mixed Reality Teleoperation Assistance for Direct Control of Humanoids. *IEEE Robotics and Automation Letters*.
1. **Kazuhiko Momose**, Troy R Weekes, and Thomas C Eskridge. 2023. Human-centered design for spaceflight participant safety and experience: A case study of blue origin suborbital flight. *New Space* 11, 1 (2023), 44-57

Peer-Reviewed Conference Proceedings

7. **Kazuhiko Momose**, Troy R Weekes, and Thomas C Eskridge. 2023c. Simulation Study of Human Input Devices in a Variable Gravity Environment for Commercial Space Transportation. In: Gesa Praetorius, Charlott Sellberg and Riccardo Patriarca (eds) *Human Factors in Transportation*. AHFE (2023) International Conference. AHFE Open Access, vol 95. AHFE International, USA. **(Best Paper Award)**
6. Troy R Weekes, **Kazuhiko Momose**, and Thomas C Eskridge. 2023. Neuroergonomics of Cursor Control Devices in Spacecraft Cockpits for Spaceflight Participants. In: Frederic Dehais (eds) *Neuroergonomics and Cognitive Engineering*. AHFE (2023) International Conference. AHFE Open Access, vol 102. AHFE International, USA.
5. **Kazuhiko Momose**, Rahul Mehta, Josias Moukpe, Troy Weekes, Thomas Eskridge, and Daniel Kidwell. 2023. Compositional Human-Agent Teams for Spaceflight. In *A Conference on Human-Computer Interaction for Space Exploration (Space CHI 2023)*.

4. **Kazuhiko Momose**, Troy Weekes, Rahul Mehta, Cameron Wright, Josias Moukpe, and Thomas Eskridge. 2023. Patterns of Effective Human-Agent Teams. In Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems. 1–13.
3. Victor Kitmanyen, Hisham Ghunaim, **Kazuhiko Momose**, and Luis D Otero. 2022. Crew-Passenger Ratio Implications on Commercial Spaceflight Design & Survivability: A Discrete Event Simulation Framework. 51st International Conference on Environmental Systems.
2. **Kazuhiko Momose** and Christiane Heinicke. 2021. Medical Bay Design Considerations for the Moon and Mars Base Analog (MaMBA). 50th International Conference on Environmental Systems.
1. **Kazuhiko Momose** and Olga Bannova. 2019. Application of Multi-Mission Single-Person Spacecraft (MMSPS) to Gateway Mission. 49th International Conference on Environmental Systems.

Non Peer-Reviewed Conference Papers

3. **Kazuhiko Momose**, Troy R Weekes, and Thomas C Eskridge. 2022. Preliminary Insights into Enhancing Human-Robot Teamwork. 35th Florida Conference for Recent Advances in Robotics
2. **Kazuhiko Momose**, Reiji Moroshima, Tomofumi Hirosaki, and Yuta Kikuchi. 2020. Feasibility study of using applicable space assets for disaster management and mitigation in Japan. In Proceedings of the International Astronautical Congress, IAC.
1. Keith Crisman, Ondrej Doule, and **Kazuhiko Momose**. 2019. Cis-Lunar Orbital Medical Facility and Roadmap. In Proceedings of the International Astronautical Congress, IAC.

Workshop & Seminar Presentations

4. **Kazuhiko Momose**, Troy R Weekes, Thomas C Eskridge, and Daniel Kidwell. 2023. Trust and Reliance in Compositional Control Teams. In Workshop on Trust and Reliance in AI Assisted Tasks at CHI 2023. (Peer Reviewed)
3. Thomas C Eskridge and **Kazuhiko Momose**, Composing a Great Team, Florida Institute of Technology Computer Science Seminar, Melbourne, FL, November 18, 2022
2. **Kazuhiko Momose**, Baseline Design Considerations for a Multi-Mission Single-Person Spacecraft (MMSPS) Proposal, 48th International Conference on Environmental Systems, Student Poster Competition, Albuquerque, NM, Jul. 2018
1. Spencer Stanford, Mateo Alvarez, and **Kazuhiko Momose**, Mars/Transit Commonality Habitat, Seminar on Space Exploration at Houston Community College, Houston, TX, March 24, 2018

Academic Service

Reviewer: CHI 2024 & 2025 Late-Breaking Work

Skills

Coding: R | Python | Javascript | Typescript | HTML/CSS

Human-Centered Design: Figma | Adobe XD | Miro

CAD: Rhinoceros | Fusion 360 | Solidworks

Last updated on: 02/2025