C.J. Hainley, M.S., P.E.

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Professional engineer with training in human factors, 6 years of industry design / R&D experience and 9 years of university teaching experience. Highly-skilled in CAD design with experience in manufacturing, automation & controls, and simulation. Seeking collaborative purpose-driven projects requiring creative user-focused solutions alongside seasoned industry experts.

QUALIFICATIONS SUMMARY

- 14+ years of experience with 6 years of direct industry experience as design engineer and 9 years experience as senior engineering student project advisor
- 9 years of teaching SolidWorks, 15+ years of CAD experience, five professional certifications.
- User focused engineer with Master's Thesis in Human Factors Research.
- Industry manufacturing experience and Fab & Assembly Lab co-creator and instructor.

PROFESSIONAL EXPERIENCE

University of Portland Director of Advanced Vehicle Design 2022 – Present

- Primary faculty director for Electric Vehicle Club and SAE Formula-E design teams.
- Developed safety training materials and protocol for Baek-DiLoreto Vehicle Bay.

University of Portland Engineering Instructor 2016–Present

- CAD instructor for 9 years – design sketching and ideation, SolidWorks, 2D drafting, tolerancing, intro to GD&T. Experience in Solidworks, Fusion, OnShape and NX with collaborative tools.
- Manufacturing focus as co-creator and instructor of Fabrication and Assembly Lab.
- Coached over 11 senior design teams through design process as faculty advisor.
- Some experience with electromechancial systems as Mechanical Systems Lab instructor.

ESCO Corporation Senior Design Engineer 2010–2016

- Experience if DFMEA analogs for concept design, testing, and validation on Ultralok design team.
- Directly involved in casting manufacturing and field trials for Ultralok mining system.
- Data analysis specialist, leading first attempt at large scale statistical analysis of customer data using Excel, Minitab, Matlab, and Python. Some experience with C++, SQL, and Microsoft Basic.
- Participated in several patent searches in collaboration with legal team.

Draper Laboratories Research Fellow 2009–2010

- Designed and tuned a model for the Altair Lunar Lander dynamics in Simulink.
- Research in Human-Centered Design by creating a method of measuring the gracefulness of transition between automation modes, experimentally validated.

EDUCATION

Massachusetts Institute of Technology 2008 - 2011

Master of Science in Aeronautical and Astronautical Engineering

Thesis: "Lunar Landing; Dynamic Operator Interaction with Multi-Modal Automation Systems"

University of Portland 2004 - 2008

Bachelor of Science in Mechanical Engineering

Magna Cum Laude with Minors in Mathematics and Music

Senior Project: SAE Aero Design West Regular Class Competition

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PATENTS & PUBLICATIONS

M.A. Cheyne, N. Cowgill, M. B. Roska, D. M. Conklin, S. H. Zenier and C. J. Hainley, " Wear Assembly". United States Patent 9222243, 29 December 2015.

C. J. Hainley. "Lunar Landing: Dynamic Operator Interaction with Multi-Modal Automation Systems," M. S. Thesis, Dept. of Aeronautics and Astronautics, MIT, Cambridge, MA, 2011.

C. J. Hainley, K. R. Duda, C. M. Oman, A. Natapoff, "Pilot Performance, Workload, and Situation Awareness during Lunar Landing Mode Transitions", Journal of Spacecraft and Rockets. June 19, 2013.

K. R. Duda, C. J. Hainley, H. Y. Wen, and C. M. Oman, "Human-Automation Interactions and Performance Analysis of Lunar Lander Supervisory Control" 2010 NASA Human Research Program Investigators' Workshop. Houston, TX. 2010

K. R. Duda, H. Y. Wen, C. J. Hainley, and C. M. Oman, "Modeling Huma-Automation Interactions during Lunar Landing Supervisory Control" 81st Annual Scientific Meeting of the Aerospace Medical Association, Phoenix, AZ. 2010