Kevin Ma

Email: kevinma1515@berkeley.edu   **Website**: kevinma1515.github.io   **Citizenship**: United States

Research interests

Research focus is in engineering design with an emphasis on human-AI interactions, machine learning, and design methodology

Education

University of California, Berkeley   08/2022 – Present
M.S./Ph.D in Mechanical Engineering
Doctoral Advisor: Prof. Kosa Goucher-Lambert

University of Texas at Austin   08/2018 – 08/2022
B.S. in Mechanical Engineering *with High Honors*

University of Edinburgh   01/2020 – 05/2020
Exchange Program

Publications

Liang, Z., Zhang, X., **Ma, K.**, Liu, Z., Ren, X., Goucher-Lambert, K., Liu, C., "StoryDiffusion: Create and Iterate Storyboard with Generative Artificial Intelligence," *Manuscript submitted for review.*

Ma, K., Grande, D., McComb, C., Goucher-Lambert, K., "Conceptual Design Generation Using Large Language Models," ***International Design Engineering Technical Conferences and Computers and Information in Engineering Conference.***

Research experience

NASA Langley Research Center
Mentors: Dr. Eric Brubaker   01/2024 – Present
Research in the applications of human-AI systems in aeronautics design research

Co-Design Lab
Mentors: Prof. Kosa Goucher-Lambert (UC Berkeley)   08/2022 – Present
Research in the intersection between design theory, AI and human-computer interaction.

StoryDiffusion Project
Mentors: Prof. Can Liu (City University of Hong Kong)   06/2023 – 09/2023
Mentored two masters students to completion of a manuscript submitted to a prestigious conference (CHI). Research topic is to develop a generative AI storyboard system for designers to use

Modelling of COVID-19 Risk Factors
Co-Mentor: Prof. Michael Lachmann (Santa Fe Institute)
Co Mentor: Prof. Jennifer Johnson-Leung (Univ. of Idaho)   10/2020 – 02/2021
Created COVID-19 model that calculates the risk of a person based on various individual parameters such as age.

Teaching experience

Graduate Student Instructor, Jacobs Institute for Design Innovation (University of California, Berkeley)   Fall 2020
DESINV 15: Design Methodology
Created and graded assignments while mentoring 14 undergraduate-level project teams through the human-centered design process (user research, concept generation & selection, prototyping)
Average student rating: 6/7.

Industry experience

L3Harris Technologies Inc.,   Greenville, TX
Structural Engineer Co-op   06/2021 – 12/2021
Conducted structural analysis of aircraft design and repairs, which include static, fatigue, and durability and damage tolerance analysis

Honors

Mechanical Engineering Summer Fellowship (UC Berkeley)   2023
James H. and Minnie M. Edmonds Scholarship   2019 – 2020

Talks

Conceptual Design Generation Using Large Language Models   08/2023
International Design Engineering Technical Conferences; presentation for conference paper

Service and outreach

Mechanical Engineering Scholars Outreach   2023 – Present
Performed outreach to first generation undergraduate students at UC Berkeley, which involved giving presentations and doing Q&A with them

Mechanical Engineering Graduate Student Council   2023 – Present
Organized social events for graduate students and advocated change that would improve the academic experience for PhD students in mechanical engineering to administrators and faculty in our department

Compass   2019
Tutored elementary and middle school students at historically under-served communities in East Austin

Professional memberships

ASME.   08/2023 – Present
Attended conferences and gave talks at various venues