Ryan Kim

(+1) 347–282–6995 | kim.ryan@nyu.edu
https://www.rkim.dev | https://www.linkedin.com/in/kimryan0416 | https://github.com/kimryan0416

EDUCATION

Tandon School of Engineering, New York University – New York, NY Sep. 2022 – Current
- Ph.D. in Computer Science - Augmented/Virtual Reality (AR/VR), Virtual Agents, Urban Simulation
- *Advisor*: Dr. Paul M. Torrens
- *Funding:* U.S. Department of Education - Graduate Assistance in Areas of National Need (GAANN) - award P200A210096

Cornell Tech, Cornell University – New York, NY Aug. 2019 – May 2020
- Master of Engineering in Computer Science – Algo. and Data Structures, AR/VR, User Experience (UX) Research Methods
- *Honors*: Cornell Tech Merit Scholarship

Cornell University – Ithaca, NY Aug. 2014 – May 2018
- Bachelor of Arts in Information Science - Web Design / Programming, Human-Computer Interaction (HCI), UX Design

RESEARCH INTERESTS

My research interests reside at the intersection of Augmented/Virtual Reality (AR/VR), Human-Computer Interaction (HCI), and Urban Simulation. It revolves around two core questions: 1) how researchers and designers could leverage AR/VR as a tool for measuring human behavior in virtual simulation, and 2) whether the findings from these analyses could better inform the design and implementation of virtual environments and experiences. Key to these questions is the insertion of human participants into virtual geographic environments and observation of the emergent interactions that naturally occur between humans and virtual agents. This approach sees the application of non-invasive sensors for high-fidelity measurement of participant movements and physiological behaviors, including but not limited to gaze tracking and electroencephalography (EEG).

PUBLICATIONS

“Boundary SPH for Robust Particle–Mesh Interaction in Three Dimensions”
- Ryan Kim, Paul M. Torrens
- Algorithms 2024, 17, 218. https://doi.org/10.3390/a17050218

“Building Verisimilitude in VR With High-Fidelity Local Action Models: A Demonstration Supporting Road-Crossing Experiments”
- Ryan Kim, Paul M. Torrens
- ACM SIGSIM PADS ’24, June 24–26, 2024. https://doi.org/10.1145/3615979.3656060

“Evoking embodiment in immersive geosimulation environments”
- Paul M. Torrens, Ryan Kim
- Annals of GIS 2024, 30(1), 35-66. https://doi.org/10.1080/19475683.2024.2316601

“Using Immersive Virtual Reality to Study Road-Crossing Sustainability in Fleeting Moments of Space and Time”
- Paul M. Torrens, Ryan Kim
- Sustainability 2024, 16(3), 1327. https://doi.org/10.3390/su16031327

ACADEMIC EXPERIENCES

Teaching Assistant – New York University Jan. 2024 – May 2024
- *Supervisor: Dr. Qi Sun*
- *Course: CS-GY 6313 - Information Visualization*
- Designed and graded homework and project materials distributed to course students throughout the semester
- Supervised weekly Office Hours sessions to advise students on programming and project-related questions

Research Intern – Information Interaction Lab, University of Michigan June 2021 – Apr. 2022
- *Supervisor: Dr. Michael Nebeling*
- Collaborated with two student researchers on a qualitative study of work patterns and needs of teachers using VR in education
- Supervised the team's Related Works library via literature reviews of papers evaluating VR-based learning modalities
- Catalogued tasks, deadlines, and documents to improve workflows and reduce miscommunication between team members

Research Lead: "Method of Loci and Memory Recall in VR" – Cornell Tech Jan. 2020 – May 2020
- *Advisor: Dr. Harald Haraldsson*
- *Course: CS 7999 - Independent Research*
- Directed an independent study to measure the effect of VR immersion, presence, and interaction modalities on memory recall
- Implemented in-game tools to allow mesh creation and transformation during runtime in VR

Research Lead: "VRKeyboard" – Cornell Tech Jan. 2020 – May 2020
- *Advisor: Dr. Harald Haraldsson*
- *Course: CS 5678 - Topics in Mixed Reality*
- Spearheaded the design of soft keyboard interfaces for typing in VR, in cooperation with two student researchers
- Heuristically evaluated popular VR controllers for shared affordances that could be leveraged in VR typing

Teaching Assistant – Cornell University Aug. 2017 – May 2018
- *Supervisor: Dr. Kyle J. Harms*
- *Course(s): INFO 1300/2300 - Introductory / Intermediate Design and Programming for the Web*
- Formulated grading guidelines on student projects for all teaching assistants during grading sessions
- Supervised weekly discussions and Office Hours sessions to advise students on programming and design-related questions

KEYNOTES

KAIST-NYU Young Researcher Day – Urban@KAIST Nov. 3, 2023
- *Honors:* G-School Best Innovation Award

PROFESSIONAL EMPLOYMENT

Curriculum Developer (Contract) – Mimo May 2021 – Aug. 2022
- Deployed a fourteen-module online curriculum inspired by Bloom's Taxonomy to teach 5k+ users about React.js development
- Implemented a Jest-based unit test framework for parsing and validating students' JavaScript and React.js code

Contractor/Consultant: UX Designer & Front-End Engineer – Tucan Fitness Aug. 2020 – Apr. 2021
- Optimized Tucan Fitness' web app with streamlined design elements and functionality, increasing user satisfaction by 170%
- Established a UX-based workflow for collecting, coding, and analyzing user interviews and feedback

Co-Founder, Chief Design Officer & Front-end Engineer – OnePlace Jan. 2020 – Feb. 2021

- Co-found OnePlace with three Cornell Tech alumni to develop an encrypted file-sharing web service between family members
- Translated high-fidelity user interface wireframes into OnePlace's web application using React Native
- Heuristically evaluated OnePlace's app UI and front-end code in weekly sprints, resolving errors and improving user flows
- Consulted with co-founders on opportunities for company growth, outreach, and venture capital funding

Contractor/Consultant – eCornell, Cornell University July 2018 – Aug. 2019

- Developed a Node.JS-based autograder capable of parsing, validating, and grading students' HTML, CSS, and JavaScript code
- Provided consultation for other eCornell courses on best methods to integrate unit testing and auto-grading into lesson material

SKILLS & EXPERTISE

Programming & Markup Languages

- *Primary:* C#, HTML5, CSS3, JavaScript
- *Proficient:* Python, PHP, SQL, C, C++

Frameworks & Libraries

- *Primary:* React.js, React Native, Node.js
- *Proficient:* Angular, jQuery.js, D3.js

Tools

- *Primary:* Meta Quest/Quest 2/Quest Pro, Unity3D, Photoshop, Figma
- *Proficient:* After Effects, Git, Cinema4D