Resume – Nik Kim

Personal Information

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portfolio | mlblog | github | linkedin | youtube

Education

B.S in Architecture - Dongguk University, Seoul, Korea, August 2019
M.S in Computational Design - Carnegie Mellon University, Pittsburgh, PA, U.S.A, May 2025

Research Keyworks

- Cooperative AI : Game Theory, Contextualized Cooperative Intelligence
- Robot Learning : RL, Multi Agent RL, Partially observable MDP(POMDP), Layered Learning
- HCI, HRI : Grounded Language, Experiment Design, Game Design

Work Experience

Research Assistant Why Research Lab, Carnegie Mellon University *June 2024-Present*
Skills : Node.js, Html, API development, HCI research, Web accessibility
- I developed an API that converts web 3D model data into accessible text adventure format.
- I'm currently preparing for the ASSET 2025 conference paper.

Head Teching Assistant, Research Assistant Carnegie Mellon University *Oct 2023-Apr 2024*
Skills : Graphic statics, Structure analysis, Communication
- I was head TA of Structural Design 1 : Form and Forces taught by Prof. Juney Lee.
- I assisted developing course material on building structure analysis using graphic statics.

Facade Consultant VS-A Korea, Seoul, Korea *Jan 2019-Jan 2022*
Skills : Visual scripting(Grasshooper), Structure and Performance simulation, Detail Drawing and 3D Modeling
- I was technical consultant in between designers and engineers.
- I engineered multiple projects involving design automation and optimization.

Architectural Designer Studio Heech, Seoul, Korea *Jul 2022-Sep 2022*
Skills : Project managing, Spatial Design, Communication
- I was end-to-end, concept design to construction, spatial design project manager.

Research

Little Cooperative Machines A contextualized cooperative reinforcement learning agent *2025*
This research introduces Contextualized Cooperative AI, emphasizing the rich, dynamic, and context-dependent nature of cooperative interactions-often overlooked in measuring machine's cooperative performance. To capture authentic interaction quality, I design and conduct a Turing test where humans play a 2P co-op Chip's Challenge with Little Cooperative Machines. Relevant technologies are RL, MARL, POMDP, Gym, Petting Zoo, StableBaselines3, Pytorch.

A Walk with Shooting Star LLM powered conversation based journaling application *2025*
I developed a conversation-based journaling tool that generates dialogue based on user data and records responses as journals. It integrates a virtual environment with shared time, place, and activities for contextualized conversations. Work now submitted as a full paper to the 2025 CHI Play conference. Implemented by Unity and ChatGPT API.

Matterport 3D to Text Adventure API that generates text adventure from 3D model *2025*
I developed an API that fetches scanned 3D data and converts it into a text adventure format, enabling unsighted users to navigate the 3D-scanned space. Implementated by HTML, Node.js, JavaScript, and the ChatGPT API.

Human-Machine Guitar Hero A cooperative and adaptive gaming machine partner *2024*
I adapted Guitar Hero into a 2-player co-op game and developed a machine player that plays with human. The machine decides human's playstyle and adjusts its actions, signaling its next moves. All code was implemented in Processing.

Projects

Boba Bubble Trouble 3D platformer game developed as a part of Global Game Jam *2025*
Tilt Five Battle Ship Emulation of Battle Ship in AR augmented tabletop version *2024*
Mole Archy Lawndart and Whac-a-mole inspired mole extermination VR game *2024*

Skills

Programming languages : Python, Java, C#, Processing
Physical Computing : Arduino, Sparkle
Software : Unity, Blender, Rhino, Grasshopper, Karamba, Ladybug, Kangaroo
Machine Learning : Pytorch, Gymnasium, Petting Zoo, Tensorboard, Wandb
Design : Figma, Photoshop, Illustration, Gimp
Languages : English, Korean

Coursework

Fundamentals of Programming, Java for Application Programmers, Data Structures for Application Programmers, Game Programming for Designers, Introduction to the Unity Game Engine, Designing for XR, Machine Learning Introduction to Deep Learning, Mathematical foundations of Machine Learning, Computational foundations of Machine Learning, Human Robot Interaction

ECA

- **2025 Global Game Jam Jammer** Our team developed 3D platformer game Boba Bubble Trouble in 36 hours. *Jan 24-26 2025*
- **SONA Immersive Storytelling Festival Student Worker** *Mar 27-29 2025*

Grants

- **XRTC Creative Research Grant** for Research "A Walk with Shooting Star" – STUDIO, Askwith Kenner Room, XRTC *2025*
- **CS+X Grant** for Team Project "Choreography of One Hundred" – The Frank-Ratchye STUDIO *2025*
- **CD Research Support Micro Grant** for Thesis Research "Little Cooperative Machines" – CD and SoA *2024*