

# Nik Kim

knocknocknik@gmail.com | +1 412.954.8948

## PROJECTS

### HUMAN-AI COOPERATIVE PERFORMANCE BENCHMARK TOOL : CO-OP TILE WORLD | CO-OP PLAY DESIGNER, PROGRAMMER

Jan 2025 - May 2025 | M.S. in Computational Design Master's Thesis

- Developed a **benchmarking game environment** as a tool for exploring real-time a human-AI cooperation.
- Developed AI agent using **path planning, behavioral cloning, and reinforcement learning** to create dynamic co-op interactions.

### INTERACTIVE TEXT ADVENTURE GENERATOR FROM 3D-SCANNED ENVIRONMENTS | SYSTEM PROGRAMMER

June 2024 - Present | Why Research Lab | Prof. Daragh Byrne

- Designed and **implemented a scalable game engine** that transforms 3D-scanned spaces into text adventure games.
- Created **spatial parsing** and **narrative generation** systems.

### COOPERATIVE GAMEPLAY AND DIALOGUE SYSTEM WITH LLM-POWERED AI COMPANION | PROJECT LEAD, PROGRAMMER

Feb 2025 - Present | XRTC Creative Research Grant

- Prototyped a pipeline of **game-context aware LLM** agent.
- Developed a dynamic dialogue system for cooperative gameplay.

### ADAPTIVE AI PARTNER FOR COOPERATIVE RHYTHM GAME

| PROGRAMMER, DESIGNER, RESEARCHER

Jan 2024 - Oct 2024 | Proceedings of 2024 Meaningful Play

- Developed a **machine player that adapts** to its human partner.
- Deployed an **interactive web version** of the system using **p5.js**.

### ROBOT INTERACTION DESIGN FOR GAME-BASED HRI STUDY

| PROGRAMMER, RESEARCHER

Jan 2025 - May 2025 | Intro to Human Robot Interaction

- Programmed **interactive robot behaviors** using Misty javascript SDK.

### 2 PLAYER 3D PLATFORMER GAME : BOBA BUBBLE TROUBLE

| PROJECT LEAD, LEVEL DESIGNER, SYSTEMS DESIGNER

Jan 24 - 26 2025 | 2025 Global Game Jam

### VR LAWNDART INSPIRED THROWING GAME : MOLE ARCHY

| PROJECT LEAD, SYSTEMS DESIGNER, TECHNICAL DESIGNER

Aug 2024 - Oct 2024 | Designing for XR course project

### AR AUGMENTED TABLETOP GAME : TILTFIVE BATTLE SHIP

| GAME EFFECT PROGRAMMER, TECHNICAL DESIGNER

Oct 2024 - Dec 2024 | Designing for XR course project

## WORK EXPERIENCE

### CARNEGIE MELLON UNIVERSITY | RESEARCH ASSISTANT

June 2024 - Present | Pittsburgh, PA, USA

- Developed an API pipeline that fetches scanned 3D data and converts it into a text based game experience.

### VS-A KOREA | FACADE ENGINEER & DESIGNER

Jan 2019 - Jan 2022 | Seoul, Korea

- Engineered multiple projects involving design automation and optimization as a technical consultant.

## EDUCATION

### CARNEGIE MELLON UNIVERSITY

M.S COMPUTATIONAL DESIGN

May 2025 | Pittsburgh, PA, USA

### DONGGUK UNIVERSITY

B.S ARCHITECTURE

Aug 2019 | Seoul, Korea

## LINKS

Web Portfolio | GitHub | YouTube

## SKILLS

### PROGRAMMING

Python • C# • Java • Javascript • HTML/CSS  
• Latex

### MACHINE LEARNING

Git/Github • Pytorch • Tensorflow  
Wandb • Gymnasium

### SOFTWARE

Unity • Blender • Rhinoceros 3D •  
Grasshopper

## COURSEWORK

### GAME DEVELOPMENT

Game Programming for Designers  
Designing for XR  
Retro Game Lab

### COMPUTER SCIENCE

Fundamentals of Programming  
Java for Application Programmers  
Data Structures for Application Programmers

### MACHINE LEARNING

Introduction to Deep Learning  
Mathematical foundations of Machine Learning  
Computational foundation of Machine Learning

### ROBOTICS

Concepts of Robotics  
Introduction to Human-Robot Interaction

## ECAS

### CMU XHACKS HACKATHON

*The Most Innovative Award* Mar 14-16 '25

### 2025 GLOBAL GAME JAM

Jammer Jan 24-26 '25

### SONA IMMERSIVE VR FESTIVAL

Student Worker Mar 27-29 '25

## GRANTS

### XRTC CREATIVE RESEARCH

STUDIO • Askwith Kenner Room • XRTC 2025

### CS+X GRANT

STUDIO • School of Computer Science 2025

### CD RESEARCH SUPPORT MICRO GRANT

Comp. Design • School of Architecture 2025