

Simon Seo

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Education

Carnegie Mellon University, The Robotics Institute

Pittsburgh, PA

Aug 2022 – Dec 2023

- M.S. in Computer Vision | GPA: 4.1/4.3
- Coursework: Computer Vision, Image Generation, Reinforcement Learning, Physics-based Methods in Vision

New York University Abu Dhabi

Abu Dhabi, UAE

Aug 2015 – May 2019

- B.S. in Computer Science, Minor in Math | Major GPA: 4.0/4.0
- Coursework: Computer Graphics, Deep Learning, Data Science, Database, Real Analysis, Probability Theory

Research & Projects

Neural Synthetic Wavelength Interferometry

CMU Capstone, Advisor: **Ioannis Gkioulekas** | Dec 2022 – Present

- Researching neural methods to enhance image quality in post-processing pipeline for μm -level depth sensing
- Implemented differentiable Fast Bilateral Solver in PyTorch for incorporation into neural pipeline
- Using R-CNN based image segmentation model to predict depth directly from interferometry measurement

Film Style Transfer

Independent Research | Mar 2020 – Dec 2020

- Mimicked visual styles of analog films using traditional Image Processing and Neural Style Transfer in TF

Functional Mappings Retaining Point-membership

NYUAD Capstone, Advisor: Saurabh Ray | Sep 2018 – May 2019

- Found incidence-preserving maps from squares to half-spaces that resulted in useful kernel functions
- Devised new methods in graph theory and combinatorial geometry

Astronomy Dome Video Rendering

NYUAD, Advisor: Andrea Macciò | Jan 2018 – Sep 2018

- Augmented NIHAO galaxy formulation experiment in C to render stereo images on supercomputer
- Authored a Python tool for easy projection mapping stereo videos to anaglyph 3D on dome screen

Planaria

Entrepreneurial Project | Mar 2021 – Nov 2021

- Prototyped a NLP service that re-designs individual curricula based on users' daily progress
- Advanced to Semi-Finals (Top 1%) in K-Startup Challenge, Korea's largest startup competition

AlbaLaw

Entrepreneurial Project | Sep 2017 – Aug 2018

- Built a chatbot to assist laborers with legal issues and received \$1,000 in seed at NYU Changemaker Challenge

Professional Experience

Odd Pilot | Lead Developer

Seoul, South Korea | Aug 2019 – Feb 2020

- Serviced a 3D & AR furniture customizing app for 30+ furniture brands using WebGL, Unity, ARKit, ARCore
- Researched photogrammetric approaches and machine learning solutions to generate 3D furniture models

Lockheed Martin | Modeling & Simulation Intern

Abu Dhabi, UAE | Jun 2018 – Sep 2018

- Designed and developed realistic mission simulations for networked VR users with Oculus glasses and Thrustmaster controllers and showcased results at IDEX (International Defense Exhibition) 2019

Teaching Experience

Fast Campus | Data Science Teaching Assistant

Seoul, South Korea | Mar 2020 – Oct 2020

- Led recitations on NLP, Classification, and Boosting algorithms for Big Tech companies' recent hires

Skills

Programming Languages : Python, Java, JavaScript, C#, C, SQL

Tools and Framework : Pytorch, TensorFlow, Oracle DB, Django, React, Unity, Arduino