

# Chih-Hsuan (Wish) Kuo

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## EDUCATION

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**Carnegie Mellon University, Entertainment Technology Center (ETC), Pittsburgh, PA**

**Master of Entertainment Technology**

May 2022 (expected)

Selected courses: *Computer Graphics, Distributed System, Computer Game Programming, Building Virtual World, Visual Story*

**National Chengchi University, Taipei, Taiwan**

**B.S. in Computer Science**

Jun 2019

Selected courses: *Operating System, Introduction to Software Engineering, Computer Network, Data Science, Data Structures, Web Search and Mining, Computer Architecture and Organization, Introduction to Machine Learning, 3D Game Programming*

## WORK EXPERIENCE

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**Software Engineer Intern**, Equa, Pittsburgh, PA

Jun. 2021 - Aug. 2021

- Built a meditation app from scratch for iOS & Android, using React Native, including UI/UX design.

**Software Engineer Intern**, Trend Micro Inc., Taipei, Taiwan

Jul. 2019 - Jun. 2020

- Designed and implemented graph-based machine learning models using behavior logs for malware type classification.
- Enhanced static layers protection model by applying behavior-based malware detection methods on Windows OS.

**Research Assistant**, National Chengchi University, Taipei, Taiwan

Nov. 2017 - Jun. 2020

- Improved the virtual film set system to decide the reaction of non-player characters with the actor using motion capture (virtual reality environment).
- Designed and Implemented camera shot recommendation system in the virtual film set.
- Created an interactive environment applying scaffolding theory to help the users get used to film in the film set.
- Published: Q.-J. Wu, C.-H. Kuo, H.-Y. Wu, T.-Y. Li, 2020.03, "Designing an Adaptive Assisting Interface for Learning Virtual Filmmaking," in Proc. of EUROGRAPHICS 9th Workshop on Cinematography and Editing, virtual. ([paper](#))
- Rewarded the Honorable Mention Award of Computer Graphics Workshop 2019, Taipei ACM SIGGRAPH with the paper: C.-H. Kuo, T.-Y. Li "Camera Shot Recommendation for Virtual Film Set," in Proc. of 2019 Computer Graphics Workshop, Tao-Yuan, Taiwan, 2019

**Summer Intern Research Assistant**, Academia Sinica, Taipei, Taiwan

Jul. 2018 - Aug. 2018

- Researched on automatically producing pieces of music based on Tonnetz with LSTM.
- Implemented deep learning models to generate pieces of music by given specific genres.

**Teaching Assistant**, *Building Virtual World*, Carnegie Mellon University, Pittsburgh, PA

Aug. 2021 - Dec. 2021

- Set up hardware and test room for 96 students in the course which students developed games rapidly within 2 weeks.
- Held workshops to teach how to develop in Unity with various platforms (e.g., Microsoft HoloLens 2, Oculus Quest2, XR Integration, VIVE trackers, eye trackers)

**Teaching Assistant**, *Object-Oriented Programming*, National Chengchi University, Taipei, Taiwan

Sep. 2019 - Jan. 2020

- Held recitation classes to review courses content for students and graded programming assignments.

## ACADEMIC PROJECTS (SELECTION)

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**Computer Graphics**, programmer, CMU, Spring 2022

- Implemented a SVG rasterizer, using supersampling to overcome anti-aliasing which draws points, lines, triangles, and bitmap images, in order to support visualizing basic files in the Scalable Vector Graphics (SVG) format.
- Implemented Scotty3D, a 3D graphics software package includes components for interactive mesh editing, realistic path tracing.

**Lyrablo**: An immersive VR experience to explore music, programmer / designer, CMU ETC, Fall 2021

- Designed and implemented efficient UI to help users better experience audio effects in a VR world.
- Implemented Bézier curved line renderer to simulate an accordion with VR controllers.

**Vlight**: An edge-native AR game, programmer / designer, CMU ETC, Spring 2021

- Built network structure connecting client to server using Python, C#.
- Integrated a real-time multi-person system which jointly detects human body (OpenPose) into the AR project.

**iCourse**: course selection system, full-stack programmer, National Chengchi University, Spring 2018

- Course: Introduction to Software Engineering
- Implemented a system from front-end to back-end for course selection with real course information using Ruby on Rails and performed unit tests with RSpec.

**Building Virtual World**, programmer, CMU ETC, Fall 2020

- OverCut**: a multi-player co-op online game implemented with Unity 3D and Photon Network.
- Lonely Lunar**: a PC game implemented with OpenCV that allows players to control by a web camera.

## SKILLS

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**Programming Languages**: C, C++, C#, Python, Java, JavaScript, Node.js, React, React Native

**Tools & Others**: Unity 3D, Tensorflow, Google Cloud Platform, Amazon Web Services, OpenGL, HTML, CSS, Figma, Zeplin, Adobe XD, MySQL, Ruby on Rails, GitHub, Perforce