Hsi-Sheng Mei

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Education

New York University, New York, NY — Sep 2019 – May 2021
M.S. in Computer Science (Courant Institute)

- **Courses:** Fundamental Algorithms, Programming Languages, Computer Graphics

National Taiwan University, Taipei, Taiwan — Sep 2014 – Jan 2019
B.S. in Electrical Engineering, GPA: 3.56/4.3

- **Relevant Courses:** Algorithms, Data Structure and Programming, Computer Networks, Database Systems, Computer Programming, Computer Architecture, Artificial Intelligence, Machine Learning, Computer Graphics

Experience

National Taiwan University, Taipei, Taiwan — Sep 2018 – Jan 2019
Undergraduate Student Researcher (Communications & Multimedia Lab)

- Conducted research on topics of **photorealistic rendering** in **computer graphics**.
- Developed a model for thin-film materials in the **physically-based renderer** *Photon-v2* using **C++**, making the system capable of rendering **iridescent effects** such as soap bubbles or car paints.

Foxconn, Taipei, Taiwan — Nov 2017 – June 2018
Software Engineering Intern

- Improved the **web dashboard** of the **OpenStack** private cloud under the **Django** framework using **Python** and utilized **REST APIs** to display status and control the virtual machines on the cloud server.
- Exploited **Ansible** playbooks to configure deployment of OpenStack components in **Docker** containers.

Selected Projects

WebGL Ray Tracer — Sep 2019

- Created 3D models in triangle meshes by **WebGL APIs** and animations using matrix stacks in **JavaScript**.
- Implemented reflections, refractions, shading algorithms, and texture mapping in **GLSL**.

Machine Learning — May 2018

- Applied **neural network** models using **Keras** in **Python** to **classification** and **recommendation** tasks.
- Ranked **top 10%** in the **Kaggle** Contest of the **Image Sentiment Classification** task among 110 students in the Machine Learning class of NTU, using **CNN** models based on **VGG-19** and **voting**.

Pacman AI Project — Dec 2017

- Using course materials of Intro to **Artificial Intelligence** from UC Berkeley (CS188) to learn algorithms of AI.
- Implemented algorithms of **tree searching, heuristics, reinforcement learning,** and **probabilistic inferences** in **Python**, for Pacman to survive and obtain higher scores.

PTT Web Crawler — June 2017

- Built **web crawlers** for *PTT*, the largest Taiwanese internet forum, with **Python**.
- Developed features such as filtering posts with keywords and counting word occurrences in 100k+ forum posts.

And-Inverter Circuit Reduction — Jan 2017

- Implemented recursive **circuit reduction** algorithms and **Monte Carlo Methods** using **C++** to remove redundant gates for And-Inverter circuits with 10k+ gates.

Technical Skills

Programming Languages: C/C++, Python, JavaScript, Matlab, Verilog, HTML, CSS, Bash Script
Systems/Tools: Linux, Docker, MySQL, scikit-learn, Keras, OpenGL, OpenMP, CUDA, Git, GitHub