

Li-Wen Lin

(972) 302-3766 | lwlin@ucdavis.edu | [linliwen88.github.io](https://github.com/linliwen88)

EXPERIENCES

SING Lab | Student Researcher *Supervised by Prof. Michael Neff* CA, USA | June 2023-Present

- Working with researchers to create automated avatars in Unity with which gestures are coherent with recorded audio.
- Developing a pipeline that converts hand tracking recorded with Oculus headset and motion captures into BVH file.

CGV Lab | Student Researcher *Supervised by Prof. Hung-Kuo Chu* Hsinchu, Taiwan | Sep. 2020-June 2021

- Implemented a 3D model placement on real-world footage program using image segmentation and gradient descent.
- Communicated with industrial collaborators and supervisor on weekly basis about current project issues, resolutions, and system performance.
- Automated project pipeline and accelerated testing time by 20% via Shell script.

National Tsing Hua University | Teaching Assistant Hsinchu, Taiwan | Sep. 2020-Jan. 2021

- Resolved 40+ students' questions in "Computer Graphics and Application" course, increasing overall scores by 20%.
- Lectured topics on GLUT, scene rendering, Blinn Phong Lighting, and fragment shaders in OpenGL.
- Created collaborative grading spreadsheet that incorporated multiple grading metrics and reduced 50% grading time.

BioPro Scientific | Firmware Development Intern Hsinchu Taiwan | July 2019-Sep. 2019

- Designed functions that convert bit signal of voltages to readable data, enabling users to see measurement results.
- Collaborated with developers via Git; refactored legacy code and reduced 30% size of source code.

EDUCATION

University of California, Davis USA | Sep. 2021-Dec. 2023 (Expected)

MS in Computer Science

GPA: 3.9/4.0

Relevant Courses: Character Animation, Geometric Modeling, Computational Design, Applied Linear Algebra

National Tsing Hua University

Taiwan | Sep. 2016-June 2021

BS in Computer Science, minor in Foreign Language and Literature

Senior GPA: 3.66/4.3

Relevant Courses: Programming, Computer Graphics, Algorithm, Data Structure, Operating System, Multimedia

SKILLS

Languages and Techniques C/C++, C#, GLSL, JavaScript, Python, Reinforcement learning, Deep Learning

Libraries and Tools OpenGL, WebGL, Eigen, OpenCV, PyQt, PyTorch, Git

Software Visual Studio, Unity, Blender, Maya, Cinema 4D, Adobe After Effects

PROJECTS

Quadruped Walking via Deep Reinforcement Learning in Unity June 2023

- Set up compound colliders and joints' DOF on a rigged model and registered them into action space for training.
- Designed reward functions and trained a cat model to move forward while balancing on four limbs.

Tetris on Self-Designed RISC-V Game Console Dec. 2022

- Developed graphics API for drawing/moving sprites; recreated fully functional Tetris in C++ with the API.
- Controlled game flow by a state machine, eliminated program crashes and optimized response time by 90%.

3D Truss Optimization May 2022

- Derived and implemented displacement-based compliance minimization algorithm; solved equilibrium using sparse Cholesky factorization and was able to generate self-supporting cantilever that was visualized using OpenGL.

Volumetric Data Visualization Web-App Jan. 2022

- Implemented ray-casting in fragment shader with interactive opacity transfer function using WebGL and JavaScript.

Treasure-Hunt Game in OpenGL Jan. 2020

- Generated terrain using height map; implemented normal mapping, differential rendering for realistic game scene.
- Incorporated collision detection, particle system and fire simulation in object orientation manner.

ACTIVITIES

Meichu Game Preparation Committee | Chairperson and Publicity Manager July 2019-May 2020

- Led 30 members to hold the official sports event between NTHU and NCTU and attracted 5000+ audiences.

ANUT 3D Animation Studio | President July 2017-June 2018

- Created storyboard and composited scenes that were modeled and rendered with Cinemema4D as final compositor.
- Coordinated production schedule among a four-member team and publicly showcased our [animation](#).

Summer Universiade 2017 | English Translator Volunteer July 2017

- Provided assistance for international athletes regarding general stadium information and Mandarin translation.