

Yi-Chi "Angela" Wu

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RESEARCH INTERESTS

Artificial Intelligence, Robotics, and Computer Vision

- I am interested in developing and building AI-based applications on robots to identify objects and interact with the environment.

Computer Graphics

- I am interested in its use in digital photography and films.

EDUCATION

Rice University

Houston, TX

Master of Computer Science

Aug. 2021 – Present

- Overall GPA: 4.00/4.00
- Spring 2022: Statistical Machine Learning, Computer Graphics, Computer Science Project (w/ Dr. Vaibhav Unhelkar)
- Taken: Algorithmic Robotics, Graduate Object-Oriented Programming and Design, Graduate Design and Analysis of Algorithms, Workplace Communication

National Taiwan University

Taipei, Taiwan

Bachelor of Science, Department of Atmospheric Sciences

Sep. 2017 – Jul. 2021

- Overall GPA: 3.80/4.30 (3.78/4.00)
- Last 60 credits: 3.96/4.30 (3.92/4.00)
- CS-related GPA: 3.95/4.30 (3.92/4.00)

University of California, Berkeley

Berkeley, CA

Summer Exchange, Department of Electrical Engineering and Computer Sciences

Jun. 2019 – Aug. 2019

- Overall GPA: 3.70/4.00

RESEARCH EXPERIENCE

Lab, Rice University

Houston, TX

Advisor: Vaibhav Unhelkar, Assistant Professor

Jan. 2022 – Present

High-Speed Networks Labs, National Tsing Hua University

Hsinchu, Taiwan

Advisor: Nen-Fu "Fred" Huang, Distinguished Professor / Dean, College of EECS

Jul. 2020 – Sep. 2020

- Modified YOLOv3 Network to detect soybeans in videos and generated a self-labeled dataset.
- Utilized Pytorch to train a Convolutional Neural Network for soybean classification.
- Collaborated and developed in a UNIX terminal.

PROJECT EXPERIENCE

Graduate Object-Oriented Programming and Design | *Java, JavaScript, react.js*

Houston, TX

Oct. 2021 – Dec. 2021

- Documented API specification documents that includes all the use cases, design decisions and how each interface or abstract classes can be used to implement all the functionality needed.
- Designed and implemented the frontend of a chat app with react.js.
- Designed and programmed the backend of a chat app and a Pac-Man game with design patterns such as MVC, singleton, factory, strategy and command design pattern.
- Conducted unit testing with over 90 percent of line coverage.

Algorithmic Robotics | *C++, OMPL, Z3*

Houston, TX

Oct. 2021 – Nov. 2021

- Fulfilled kinodynamic motion planning for pendulums and cars using OMPL with self-implemented planner RG-RRT.

- Conducted SAT task planning for Icy Path and Sokoban on Ice problem using Z3.

Applications of AI Neural Network Models | *Pytorch, Jetson Nano*

Taipei, Taiwan

Sep. 2020 – Jan. 2021

- Designed an app that generates music scores according to movie scenes in real-time using Convolutional Neural Networks and Bi-LSTM with PyTorch.
- Fulfilled fruit recognition with over 100 classes of fruits using deep Convolutional Neural Network.
- Performed real-time tasks on Jetson Nano.

Introduction to Computational Logic | *Coq, NuSMV*

Taipei, Taiwan

Oct. 2018 – Jan. 2019

- Proved the Chinese Remainder Theorem with Coq.
- Built a NuSMV model to reconstruct the man-in-the-middle attack to the Needham-Schroeder authentication protocol.

NASA International Space Apps Challenge Hackathon | *Unity, C#*

Taipei, Taiwan

Group: *G. Melanophilus*, Project: *To the Cryosphere*

Oct. 2018

- Developed an Antarctica-themed survival game with Unity and C#.
- Analyzed and visualized data from NASA to support the proposed theses.

WORK EXPERIENCE

AndroVideo Inc.

Taipei, Taiwan

Artificial Intelligence R&D Intern

Sep. 2020 – Feb. 2021

- Constructed a Convolutional Neural Network with a spatial transformer network for facial expression recognition.
- Utilized TensorFlow to make a pull-up counter with pose estimation.

PRESENTATION

NASA International Space Apps Challenge Hackathon

Taipei, Taiwan

Topic: *Solution to Polar Quest - To the Cryosphere*

Oct. 2018

- Presented the game and the scientific findings we got from examining the given data.

RELEVANT COURSES

Compulsories

- Introduction to Computer Science, Discrete Mathematics, The Structure and Interpretation of Computer Programs, Data Structure, Digital Systems Design and Laboratory, Engineering Mathematics(I)-Linear Algebra, Probability and Statistics, Operating Systems, Computer Architecture, Formal Languages and Automata Theory, Graduate Object-Oriented Programming and Design, Graduate Design and Analysis of Algorithms

Electives

- C/C++ Programming, Introduction to Computational Logic, Introduction to Computer Networks, Computer Vision, Applications of AI Neural Network Models, Algorithmic Robotics

SKILLS

Programming Languages

- Python, C/C++, Java, Go, MATLAB, Fortran, JavaScript, HTML5, GrADS, C#, Verilog, Coq, NuSMV, LaTeX, RISC-V, MIPS

Operating Systems

- UNIX, macOS, Windows, xv6

Tools

- OMPL, PDDL, ROS, SAT Solvers, Unity, Docker, git, heroku

Languages

- Fluent: Chinese, English; Intermediate: French; Basic: Japanese, Korean

Test Scores

- TOEFL: 105/120 (L:30/30, R:29/30, W:24/30, S:22/30)
- GRE: 328/340 (Q:170/170, V:158/170, AW:3.5)

LEADERSHIP EXPERIENCE

Technical Lead

Team WhatsUpp, Graduate Object-Oriented Programming and Design

Houston, TX

Nov.2021 - Present

- Kept track of the developing process.
- Built the skeleton code of the Pac-Man game.
- Made technical decisions for the Pac-Man game.
- Dissected parts of the program to assign work to the developers.
- Reviewed codes and implemented the missing features of the application.

Head Camp Counselor

NTU PPM X AS Orientation Camp

Taipei, Taiwan

Mar. 2018 – Sep. 2018

- supervised a group of 20 counselors.
- Organized an event with over 70 attendees.