Meng-Chen Lee

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EDUCATION

University of Houston (UH) — Houston, TX, USA
Ph.D. in Computer Science — Aug. 2020 – May 2025 (expected)

- Cumulative GPA: 3.953/4.0
- Relevant courses taken: Computer Graphics, Machine Learning, Adv Numerical Analysis, Operating Systems

National Cheng Kung University (NCKU) — Tainan, Taiwan
B.S. in Biomedical Engineering — Sept. 2015 – Aug. 2019

- Overall GPA: 3.45/4.3, Upper-division GPA: 3.65/4.3

RESEARCH EXPERIENCE

Competition - EMedIC, CUHK — Central Ave, Hong Kong
Team Leader (Advisor: Assoc. Prof. Yu-Hua Fang) — Aug. 2018

- Determined the median cubital vein for drawing blood by image-processing
- Built a robotic system to automatically move to the insertion point
- Led my team members to complete missions on time and integrated image-processing, mechanic system, and user interface by python on Raspberry Pi
- Collaborated successfully and qualified for the finals

PROJECTS

Advanced Numerical Analysis, UH — Houston, TX, USA
Error Detection and Spline Interpolation of eye gaze data — Jan. 2022 - May 2022

- Recorded eye gaze using ERGONEERS DIKABLIS GLASSES, then removed empty and useless data
- Detected and eliminated outliers using z-score, then filled gaps by applying cubic-spline interpolation
- Built a friendly UI for users to easily load data and automatically clean it out

Machine Learning, UH — Houston, TX, USA
A Case Study in Covid-19 Detection Based on X-ray Chest Images — Sep. 2020 - Dec. 2020

- Pre-processed chest X-ray images by scaling and applying grayscale.
- Utilized Principal Component Analysis for feature selection and performed grid search from SVM and KNN models.
- Evaluated the accuracy and found out CNN outperformed other models to detection identify COVID-19 from chest X-ray images.

Web Programming, NCKU — Tainan, Taiwan
Mobile Game Creation — Sep. 2018 - Jan. 2019

- Built concept and specification of the game and defined the story and art style
- Built the front end of the game with Phaser
- Utilized MySQL to create a database and created the server using Node.js

Computer Aided Engineering, NCKU — Tainan, Taiwan
Dog Species Identification — Sep. 2018 - Jan. 2019

- Trained neural networks to recognize dog species through transfer learning using AlexNet
- Created GUI to load images or recognize the species in real-time

Introduction to rendering methods, programming and applications, NCKU — Tainan, Taiwan
Simple 3D Software — Sep. 2018 - Jan. 2019

- Utilized OpenGL to create a windowand designed GUI using Dear ImGui
- Built a simple 3D software for users to create, displace, rotate, deform, and color models

WORK EXPERIENCE

Department of Computer Science, UH Houston, TX, USA

Graduate Teaching Assistant Jan. 2021 - Jul. 2022

- Made homework and exams for courses: Computer Graphics and Data Structure
- Graded and resolved students' questions about homework and exams for courses: Database, Computer Graphics, and Data Structure

Medical Device Innovation Center, NCKU Tainan, Taiwan

Research Assistant (PI: Prof. Jia-Yush Yen) Jan. 2020 - Jun. 2020

- Created a database storing patient's data
- Built mobile app for patient to interact with and send the video to backend
- Built mobile app for doctor to access patients' data
- Determined the skeleton of patient using OpenPose and detected if patient have epilepsy by Python

Co-op - Brain Navi Biotechnology Co., Ltd. Tainan, Taiwan

Research Assistant, part-time Sep. 2017 - Jan. 2018

- Used OpenCV to capture the features of a phantom by C++
- Utilized Intel SDK to get the depth from a depth camera
- Tracked the features and calculated the displacement and rotation of the phantom
- Calculated the world coordinate of the phantom in real-time

Special Project Teacher, Tainan Bilingual International Education Association Tainan, Taiwan

Primary teacher Mar. 2017 - Jun. 2017

- Created remote car by 3DP and made it easy for children to assemble
- Designed the syllabus for third-grade elementary school students
- Taught students programming by controlling the remote car on a programming platform SNAP!
- Collected feedback from students and improved the feasibility of the elementary school's programming education

LEADERSHIPS

Primary Officer, Taiwanese Students Association at UH May. 2022 - present

- Led team members to hold several activities for Taiwanese students to learn about American culture
- Participate in school activities and exchange experiences and cultures with other organizations

Captain of Table Tennis Team, Student Association of Department of BME at NCKU Jul. 2017 - Jun. 2018

- Founded and headed the table tennis team of the BME department
- Led the team to hold the competition which invited every student of our department to join

HONORS & AWARDS

Silver Award - Prague, Czech Republic Jun. 2018

IFMBE Student Design Competition at the IUPESM World Congress on Medical Physics and Biomedical Engineering

- Create a telemedicine device to provide prenatal care in resource-scarce communities

Honorable Mention - ICMIT, Suzhou Jun. 2018

3D Scanning Application Competition

- Utilized Blender to create a model to repair cranial bone

Languages and Technologies

Programming Languages: C++, Python, MATLAB, C, C#, JavaScript, PHP, SQL

Tools: Git, Visual Studio, OpenGL, Anaconda, CMake, Node.js, HTML, CSS, Blender