

Weiyuan Deng

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Portfolio: <https://weiyuandeng.github.io/>

Education

- MS, Computer Graphics, Vision and Imaging**, *University College London*, Merit. 09/2021 – 10/2022
- MS, Robotics**, *Northwestern University*, GPA: 3.46/4.00. 09/2016 – 12/2017
- BS, Mechanical Engineering**, *Purdue University*, GPA: 3.46/4.00. 08/2014 – 05/2016
- Scholarship: Purdue School of Engineering and Technology - SYSU: Impact Scholarship
- BS, Theoretical and Applied Mechanics**, *Sun Yat-Sen University*, GPA: 85%. 09/2012 – 07/2016

Professional Experience

Projects

- Procedural Generation of Underwater Vegetation**, *University College London* 2022
- Reconstructed the ancient underwater archaeological site of Amathus in Unity used Procedural Generation
- Escape the Dungeon - Virtual Environment Project**, *University College London* 2022
- Constructed and synchronized (networked) the scene with multiple triggers of each individual player
- Imaging Processing Project**, *University College London* 2021
- Implemented face morphing and Poisson imaging editing
- Autonomous Path-Following Car Controlled by Android Phone**, *Northwestern University* 2017
- Designed and built a differential drive robot car using 3D printer and laser cutter
 - Developed an image processing Android app for detecting the road with a phone camera
 - Controlled motor with PIC microcontroller, used Android to communicate over USB CDC protocol
- Machine Learning Projects**, *Northwestern University* 2017
- Classified plying cards in real time with OpenCV and Convolutional Neural Net in TensorFlow
 - Classified five different instruments with Mel-Frequency Cepstral Coefficients and SVM
- Robot Shuffle Control Based on Corner Detection**, *Northwestern University* 2016
- Used Harris corner detection to classify 3 cubes (replaced cups in traditional shell game)
 - Baxter played a simplified classic shell game with ROS using inverse kinematics
- Machine Design**, *Purdue University* 2015 – 2016
- Designed a high capacity ball feeder and a plastic-recycling crusher with Creo and analyzed loading to varies structures with ANSYS
 - Designed a medical vending machine with Creo and programming for drug delivery
- Metalworking Training**, *Guangdong University of Technology* 2014

Research

- Magnetic Tracking System for Burrowing Robot**, *Northwestern University* 2017
- Developed a magnetic tracking system used least square method with Arduino and two magnetometers

Song Classification and Robot Dance, *Northwestern University* 2017

- Implemented song classifier Dejavu based on FFT and planned motion for humanoid URDF

Power Density Maximization of Lithium Ion Battery, *Purdue University* 2015 – 2016

- Found maximum power density of LIB with FEA and analyzed its heterogeneous grain structure
- Re-created grain structure that maximize power density of LIB with MATLAB

Analysis of Force Transfer and Arching Effect of Particles Assemblies, *Sun Yat-sen University* 2014

- Created 3D model for a sand pile and a silo ensiled with sand using PFC3D
- Analyzed force transmission between particles by means of Discrete Element Method

Work

Algorithm Engineer, *YOUIBOT Robotics Co .Ltd* 09/2019 – 07/2021

- Improved registration accuracy of docking module based on a single reflector feature (applying for patent)
- Improved the deceleration performance of AGV with a smooth velocity S-curve
- Designed a mapping and localization system with multiple reflectors based on point cloud registration
- Optimized and reconstructed localization module based on Iterative Closest Point (ICP) algorithm
- Implemented and tested the LOAM SLAM system and the HDL SLAM system

Engineering Intern, *ZHONGWEI Technology Company* 05/2018 – 08/2019

- Implemented and developed a registration system based on Kernel Correlation algorithm
- Improved grid map data processing module for localization system with K-Nearest Neighbour
- Programmed and controlled UAV for aerial survey

Assistant, *Key Laboratory of Optoelectronic Material and Technology of China* 09/2012 – 01/2013

Skills

- Programming: C/ C++, Python, Git, HTML, CSS, MATLAB
- Software: Unity, OpenGL, MySQL, ROS, Tensorflow, Pytorch, ANSY, Creo, OpenCV, Linux OS
- Knowledge: Machine Learning, Computer Vision/Perception, Causal Learning, Computer Graphics, Virtual Environment, Finite Element Analysis, Manipulation

Other

- Proficient in Chinese Mandarin, Cantonese and English
- Hostess, *AliGame Comic-Con*, 2018
- Volunteer, *Indiana State Museum*, 2015
- Volunteer Teaching Assistant, *Xing'er School of Deaf Children*, 2012