Chenda Duan

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# Education

## University of California, Los Angeles (UCLA), School of Engineering, Los Angeles, CA

Bachelor of Science in Computer Science, GPA: 4.0/4.0 2019.09 – Expected 2022.06

Dean's List 2019 – 2021

# Research Experience

## UCLA Structure-Computer Interaction Lab

Undergraduate Researcher 2020.06 –

**Low-Cost Autonomous Weed-Control Agri-Robot Project**

* Collaborated to develop a 2D LiDAR-based road identification system and improved the navigation accuracy for the robot while maintained at low cost.
* Built a simulated field in Gazebo to test the robotic navigation algorithm.
* Modified VI-SLAM, a Visual-Inertial Simultaneous Localization and Mapping Algorithm to further improve the localization performance of the robot.
* Trained a model for crop/road identification using yolov5, an object detection architecture to improve the identification capability at the sparse crop environment (where 2D-Lidar performance is poor).

**Soft Robots Project**

* Used inverse learning to train a model to generate the physical design parameters for soft robots.

## UCLA Center for Neurobehavioral Genetics

Undergraduate Researcher 2020.06 –

**eQTL Mapping Project**

* Process RNA sequence data eliminating useless data to feed CiberSort, TWAS-Fusion and other state of art algorithm.
* Perform Principal Component Analysis (PCA), data visualization and other data analysis using R.

# Publication

Tommer Schwarz, Toni Boltz, Kangcheng Hou, Merel Bot, **Chenda Duan**, Loes Olde Loohuis, Marco P. Boks, René S. Kahn, Roel A. Ophoff , Bogdan Pasaniuc, “Powerful eQTL mapping through low coverage RNA sequencing”, submitted to The American Journal of Human Genetics and is currently under review*.*

Du, Y., **Duan, C**., Jawed, M. K., “Inverse design of soft flagellated robots”. To be submitted to RAL in November 2021

Du, Y., Mo, W., **Duan, C**. Jawed, M. K., “2D LiDAR based inter-row navigation algorithm”. To be submitted to IROS 2022

# Course Project

**Kontagion-Game** 2020.1-2020.2

Developedthe game using C++ and freeglut utility library.

**GooberEats-Delivery Path Planner** 2020.2-2020.3

Designed a path planner program that can generate the shortest path for delivering several package in west Los Angeles area.

**Egglendar Online Calendar** 2020.10 - 2020.12

Designed an online student calendar specially for international students using Bootstrap and Material-UI for designing and Mysql as the database. Project is open-source and can be found at github.com/Clumsyndicate/Smart-Calendar-Frontend

# Patent

Patent: Ferris Shelf(Utility Model Patent # ZL 2017 2 0414471.6, Issued in June 2018 in China)

# Leadership/Extracurricular Activities

## UCLA Bruin Space Club

Co-leader of the software sub-team and Project Overseer 2019.10 –

* Developed a platform for scientific payload using a high-altitude balloon
* Monitoring and controlling the status of the balloon on Raspberry Pi and Xbee
* Planning updated high-altitude balloon launches
* Provided Python tutorial sessions for the new club members

# Skills and Interests

* Computer Skills: C, C++, Python, Shell, R, Robot Operating System
* Language: English (fluent), mandarin (native speaker)
* Hobbies: Dual keyboard electone, basketball