Amirali Omidfar

| 818.510.2546 | omidfar@ucla.edu | LinkedIn | |GitHub | Website |

EDUCATION

University of California, Los Angeles
Master of Science in Electrical and Computer Engineering   March 2021

Deep Learning, Machine Learning, Reinforcement Learning, Embedded Systems, IoT (Internet of Things), Computational Robotics, Computational imaging, Analog Circuit Analysis, Communication Theory, Algorithms and Complexity, Linear Algebra, Probability, and Statistics

University of California, Los Angeles
Bachelor of Science in Electrical Engineering
August 2016 - March 2019

EXPERIENCE (3 YoE)

Brooks Automation, Software Engineer

Fremont, CA | *April 2021 - Present*
- Design and implementation of image processing and computer vision algorithms for object detection/tracking and segmentation in Machine Vision products.
- Develop the architecture and System design integration based on customers' requirements..
- Two pending patents for use of machine vision in Semiconductor robotics field
- Recipient of "Brooks 2021 and 2024 Retention incentive" for being a key reason for the success of the Semiconductor Automation Business
- Mathematical modeling and kinematic derivation for robots movement

Te Connectivity, Machine Learning and Embedded Systems Intern

Fremont, CA | *June 2020 - December 2020*
- Recipient of "TE Spot Award" for self-driven project leadership and adaptability skills . Accomplished by reaching end of year deadlines and milestones with a team of seven.
- Prototype a Haptic feedback controller (worked on both **the firmware and the circuit design**) for the medical unit project.
- Utilized Natural Language Processing and Recurrent **Neural Networks** for designing an AI-based search engine for TE's connectors
- Write firmware for **STM32 MCU**'s using **STMCube ID** and **mbed OS** compiler
- System engineer IoT data acquisition device using an Arduino nano board with **WiFi** and **BLE** protocols

UCLA HCI Group, Graduate Research Assistant

Los Angeles, California | *May 2019 - Jan 2021*
- Research on interactive and ubiquitous technologies for IoT devices.
- Designing a universal wrist-worn controller utilizing deep learning on IMU and image data
- Visual Assistive technologies and indoor navigation systems for visually impaired people.
- Teaching Assistant for Intro to Embedded Systems Course

UCLA Lemur Lab, Undergraduate Research Assistant

Los Angeles, California | *April 2018 - May 2019*
- Developed, deployed and tested drone prototypes using Optitrack Motion Capture system and ROS
- Design of Under-actuated controller for quad copters

SKILLS

PROGRAMMING
C/C++, C#, Python, Java, Bash, HTML, CSS

Peripheral Communications and Protocols
BLE, SPI, I2C, UART, FreeRTOS, MQTT

Programming Tools
Docker, TensorFlow, Keras, PyTorch, ROS, STM32CubeIDE, CubeMax, Atmel Studio, Version control (Git), MATLAB

Embedded Boards
Nvidia Jetson, Arduino, Raspberry Pi, STM32, ESP32, ESP8266,AVR and Dev Core Boards

OTHERS
Eagle PCB Design Software, Fusion360, OpenCV, Natural Language Processing, Reinforcement Learning,

PROJECTS

CamIoT | {Paper Link} | Python,PyTorch, C++
Built a camera based wrist-worn device to interact with smart home appliances using one-shot learning for object detection and sift based deep learning for tracking the user's index finger (Demo).

DirectMe | {WebSite Link} | C++, Android
Designed an interactive Indoor navigation system for visually imparied people using UWB technology and android application development. For more information please check the project github repository.

EEG Signal Processing | {Paper Link} | Python, PyTorch
This is the UCLA ECE:C247 class project, processing and decoding Electroencephalogram (EEG) signals with deep learning methods. For more information please see link below to our report or check our github repository.

RRL in MAPF | {Paper Link} | Python, PyTorch, Reinforcement Learning
This is an ongoing project evaluating the effect of relational reinforcement learning in multi agent path planning systems such as warehouse robots. Here's our class presentation.

TrackMe | {Presentation Link} | C++, Swift
TrackMe uses GPRS and GPS signals sent from an Arduino to locate and track items in real time. The user-interface works through an iOS app. You can read more about TrackMe here

Crazyflies | {GitHub Link} | C++, ROS, Bash
Using ROS and Optitrack motion capture system, in this project I set up autonomous flying of nano quadcopters called Crazyflies. This was an infrastructure for multi agent robot systems (my page at Lemur lab).

Certificates

Coursera | Fundamentals of Reinforcement Learning

Coursera | Improving Deep Neural Networks

Coursera | Neural Networks and Deep Learning

Coursera | Sequence Models

Coursera | Convolutional Neural Networks