

Patrick Youssef

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EDUCATION

University of California, San Diego

Master of Science in Computer Science & Engineering; GPA: 3.95

La Jolla, CA

Sep. 2020 – Mar. 2022

University of California, Irvine

Bachelor of Science in Mechanical Engineering; GPA: 3.5

Irvine, CA

Sep. 2016 – Mar. 2020

EXPERIENCE

SpaceX

Hawthorne, CA

Software Engineering Intern – Guidance, Navigation, & Control

Jun. 2018 – Aug. 2018

- Overhauled simulation configuration to enable full launch-to-land simulations and reduce configuration edit time by 70%
- Automated updating over 500 legacy configurations to interface with new structure while cleaning out deprecated sims
- Provided Python scripts to generate post-simulation statistics that were used to validate crew dragon for flight with NASA

Vehicle Engineering Intern – Crew Dragon Test Equipment

Mar. 2018 – Jun. 2018

- Developed computer vision software to automate critical testing with 50% fewer errors and in 20% the time versus prior
- Led the creation of a safety system that automatically isolates high-pressure systems to reduce danger during an accident

Engineering Computations Course

Irvine, CA

Teaching Assistant

Sep. 2017 – Dec. 2019

- Involved in revising assignments, proctoring exams, writing exams, and conducting biweekly office hours for 3 terms
- Provided satisfactory teaching resources to over 900 students with an average overall evaluation of 3.81/4.0

HyperXite - HyperLoop Competition Team

Irvine, CA

Engineering Lead – Systems, Software, & Simulation

May. 2018 – Mar. 2020

- Managed high-level vehicle design, on-vehicle software, and development of multiple high-fidelity simulations
- Corresponded with SpaceX engineers to ensure compliance/safety in critical elements of the high-level vehicle design

UC Irvine Biorobotics Lab

Irvine, CA

Researcher – Controls Software

May. 2018 - Sep. 2018

- Implemented admittance & impedance control using SimuLink realtime for Duchenne muscular dystrophy rehabilitation

FIRST Robotics Team 3476

Irvine, CA

Technical Mentor

Jun. 2017 - Mar. 2020

- Coached 20+ robotics students through computer vision, controls, and mechanical design on a world-class robot

JMS Materials Research Group

Irvine, CA

Researcher – Data Analysis

May. 2017 - Sep. 2017

- Developed data processing and visualization tools in MATLAB to decrease researchers' time expense and error rates

PROJECTS

Roadway Segmentation: Semantic segmentation on CityScapes using a modified U-Net with transfer learning

Deep Image Colorization: Self-supervised grayscale image colorization using pre-trained and custom feature fusion

Neural Collaborative Filtering: Rating prediction for (user, item) pairs using the NeuMF deep learning model

N-Body Simulator: gravitational simulator using an RK4 integrator and novel combinatorics for fast acceleration updates

Other Projects: Particle Filter SLAM, PatrickYoussef.com, Human Activity Classification, Online Store Stock Checker

PRESENTATIONS

Internships 101: Engaged with over 50 UC Irvine students on how to network effectively to land your dream internship

Effective Engineering: Taught over 75 robotics students the general steps to produce effective engineering solutions

Demystifying DP: Presented to over 15 SWEs a simple method for approaching most dynamic programming problems

SKILLS

Languages: Python, Linux, MATLAB, R, JavaScript, HTML, C++

Technologies: NumPy, Pandas, PyTorch, Keras, OpenCV, Gatsby, Git, Linux