

Sean Farhat

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sfarhat.github.io

EDUCATION

University of Illinois, Urbana-Champaign

M.S., Computer Science

2021 - 2023

Research Areas: Optimization, Machine Learning, Signal Processing

University of California, Berkeley

B.S., Electrical Engineering and Computer Science

2016 - 2020

GPA: 3.79/4.00 (Graduated with Honors)

EXPERIENCE

Berkeley Artificial Intelligence Research Lab

2019-2020

Researcher with Prof. Laurent El Ghaoui

Topics: Implicit deep learning, sparsity in neural networks

Accenture Labs

2019

Systems & Platforms Research Intern

Led robotics project to create digital twin via ROS and Gazebo to accelerate transfer learning for perception and actuation tasks, designed and implemented modular architecture supporting diverse automation tasks, reported to head of research division. *Patent Pending:* A Digital Twin for Improved DevOps in Robot Applications.

TEACHING

CS 61C: Computer Architecture (<https://cs61c.org/su20/>)

Summer 2020

Instructor (Rated 5.64/7)

Responsibilities: Ran course in summer offering to 330 students by managing a staff of over 50 TAs, tutors, and interns, creating and delivering course materials in an asynchronous and synchronous setting. Taught concepts including C/low-level programming, RISC-V/assembly programming, digital logic design, 5-stage CPU pipeline design and their hazards, caches, virtual memory, I/O, and models of parallelism.

EECS 127: Optimization Models

2020

Content TA (Rated 4.85/5)

Responsibilities: Wrote homeworks and held office hours, taught topics such as linear algebra, matrix/vector calculus, convexity, descent methods, duality, SVMs, and applications of optimization in machine learning.

CS 61C: Computer Architecture

2018-2019

Discussion, Lab, Content, Administrative TA (Rated 4.8/5)

PROJECTS

Check The Rhyme

Pytorch, Flask

Created karaoke web app with improved Forced Alignment algorithm using Convolutional Networks and novel loss function which improves interpretability of end-to-end ASR models.

Pendulum Bot

Python, ROS

Link: <https://cpkurotori.github.io/pendulum-bot-website/>

Programmed a robot to model, predict, and catch a ball on a pendulum using only camera input via 5 nodes: color, depth, model construction, prediction, and actuation.

Kobuki Kart

C, Python

Link: <https://github.com/njriasan/SPOOKY-KOBUKI-KART>

Mario Kart using Roombas (Kobukis); involves Bluetooth connections from Nintendo Switch remotes to Kobukis, Finite State Machine logic for smooth actuation, and nodes to communicate with sensors functioning as powerups/obstacles on track.

TECHNICAL SKILLS

Proficient: Python, Java, C, Pytorch, ROS, Gazebo, Git, RISC-V, Unity, L^AT_EX

Familiar: C#, C++, SQL, HTML, CSS, jQuery, Javascript, Bootstrap

AWARDS & RECOGNITION

Outstanding GSI Award, Regents' and Chancellor's Scholarship, Tau Beta Pi, Eta Kappa Nu