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 6.4/7)
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, LaTeX
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