

YOUSSEF FARAG

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Education

Bachelor of Science Apr 2020
University of British Columbia, Vancouver, BC
Concentration: Computer Science - Computational Intelligence & Design

Experience

Research Assistant: PLAI Group UBC Sep 2019 - Apr 2020
Research lab headed by Dr. Frank Wood: worked mainly on reinforcement learning/imitation learning methods for self-driving cars

- Trained multiple basic driving agents in a simulator (CARLA) for benchmarking reinforcement learning and imitation learning methods for self-driving cars
- Integrated a pre-existing imitation learning model into a simulator to support further training with reinforcement learning, as well as multi-agent driving
- Developed various aspects of the reinforcement learning pipeline, including initialization and configuration of the simulator, as well as designing a synchronous training framework

Machine Learning Engineer Co-op: MetaOptima R&D Team Jan 2019 - Sep 2019
Co-op position as a Research and Development Team member at a dermatology tele-health startup based in Vancouver, BC.

- Redesigned and retrained the company's skin lesion classification model, using PyTorch and OpenCV, improving performance by over 3%
- Developed a pipeline for patient de-identification of images, leveraging localization and segmentation networks
- Evaluated models developed in-house; identified weaknesses, inconsistencies, or biases through data, and recommended solutions and alternative approaches

Research Assistant: Visual Cognition Lab UBC Jul 2018 - Apr 2019
Research lab headed by Dr. Ronald Rensink: software engineer for a project investigating perception of correlation in the human brain

- Implemented new functionality in the lab's codebases, adding new experimental conditions and addressing various bugs to ease data collection and minimize patient fatigue
- Along with project members, evaluated and justified various changes to the current experimental methodologies, including revision of subject exclusion criteria and pre-experiment tasks

Teaching Assistant: Computer Science Department UBC Jan 2016 - Dec 2017
Assisted with the instruction of CPSC 110, the introductory computer science course at UBC

- Led weekly lab sections of 20+ students, held office hours and exam prep sessions
- Identified and addressed needs of individual students and learned to communicate and tailor course material effectively to answer questions clearly and concisely

Proficiencies & Interests

Python, PyTorch, Numpy, Pandas, Keras, Tensorflow, C++, Git, OpenCV, OpenAI Gym
Interested in statistical machine learning, reinforcement learning, computational neuroscience, program synthesis

Relevant Coursework

Applied Linear Algebra, Functional & Logic Programming, Probability, Statistical Inference, Intermediate Algorithm Design & Analysis, Machine Learning and Data Mining, Optimization, Intelligent Systems