# Jullian Arta Yapeter

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## SUMMARY OF SKILLS

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|---|---|
| **Languages** | Python, C++, C#, Go, MATLAB, JavaScript, HTML, CSS |
| **Software** | PyTorch, TensorFlow, OpenCV, NumPy, Pandas, React, gRPC, Flask, MongoDB, Git, DVC, W&B, |
| **& Hardware** | Unity, Docker, AWS (EC2/S3/Lambda), GCP, Git, ROS, Raspberry Pi, NVIDIA Jetson, Arduino |

## EDUCATION

**University of Southern California** *August '20 - June '23*
M.S., Computer Science  GPA: 4.0/4.0
Researcher at the Cognitive Learning for Vision and Robotics Lab, TA for CSCI561 (Foundations of AI)

**University of Waterloo** *September '15 - June '20*
B.ASc., Honours Mechatronics Engineering/ Artificial Intelligence Option  GPA: 88.87/100
Dean's Honours List (3x ranked top 10 in class), NSERC Research Award Recipient, President's Scholarship
Courses: Computational Vision, Autonomous Vehicles, Machine Intelligence, Capstone: devpost.com/software/lilypod
Published *A Deep Learning Approach to the Screening of Malaria Infection: Automated and Rapid Cell Counting, Object Detection and Instance Segmentation using Mask R-CNN* to Computerized Medical Imaging and Graphics

## EXPERIENCE

**Cognitive Learning for Vision and Robotics (CLVR) Lab** *November '21 - Present*
*Deep Reinforcement Learning (RL) Graduate Research Assistant* *Los Angeles, CA*
· Implemented PPO with reward-induced representation pre-training, improving RL training efficiency on downstream tasks.
· Created an iOS app using Unity (C#), ARFoundation, and YOLOv5 to collect human action trajectories for RL research.
· Researching the use of Offline RL methods to augment seed trajectory datasets for improved downstream RL training.

**Walt Disney Imagineering** *May '19 - August '19, May '22 - August '22*
*R&D Lab Associate Intern - Computer Vision and Perception Team* *Glendale, CA*
· Designed, implemented and launched a secure and Dockerized in-house AI development environment capable of versioning and storing data and models, labelling and querying metadata, and enabling cross-project collaboration.
· Created imitation learning-based human-object interaction functionality for Disney's computer vision pipeline using Python, C++, TensorFlow, and ROS, to efficiently drive show actuators through human pose via DMX and OSC.

**Dragonfruit AI** *January '21 - July '21*
*Computer Vision & AI Engineering Intern* *Menlo Park, CA*
· Spearheaded the creation of a hybrid (cloud & on-premise) security video AI processing service with real-time alerts.
· Delivered low-bandwidth video object-search service, utilizing Go, Python, TensorFlow, AWS, Elasticsearch, and gRPC.

**IBM** *September '18 - December '18, September '20 - December '20*
*AI & IoT Developer Intern* *Toronto, ON*
· Prototyped a Dynamixel-based 4DoF robotic arm that picks up targets as recognized via a hybridization of Faster R-CNN (Caffe) and KCF Trackers, on NVIDIA's Jetson TX2 and OpenCM.
· Designed and built a ROS-based framework (C++) for prototyping path planning controllers on iRobot Roombas.
· Developed an image annotation web application to produce PascalVOC files, using React, Express, and MongoDB.

**General Motors (2908 Innovation Lab)** *September '17 - December '17*
*Innovation Specialist Intern* *Kitchener, ON*
· Conducted iterative prototyping and field research to establish product-market fit for advanced technology projects, such as E-Bikes and Towing Visibility Dashboard, using Arduino, InVision, HTML/CSS/JavaScript, Unity, and OpenCV (C++).
· Created and facilitated Design Thinking workshops to generate innovative solutions across various GM teams.

**A.U.G. Signals** *January '17 - April '17*
*Image Processing Software Engineering Intern* *Toronto, ON*
· Implemented an image processing pipeline in Python and MATLAB to analyze satellite imagery (channel-realignment, spectral analysis, resolution standardization, and georeference-based transformations) for use in precision farming.
· Delivered a 300% improvement in processing time as compared to the legacy pipeline.