Yesh Godse

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EDUCATION

Oregon State University — Exp. Grad. Jun 2021

B.S. – Computer Science, Minor in Mathematics, Specialization in Robot Learning

- **GPA - 4.00**
- Grad Courses: Applied Math, Machine Learning (planned)
- Undergrad Courses: Algorithms, Data Structures, Operating Systems, Probability (planned)

EXPERIENCE

Collaborative Robotics and Intelligent Systems (CoRIS) Institute — Sep 2018 - Present

Researcher advised by Professor Alan Fern and Professor Jonathan Hurst

- Developing continuous *Deep Reinforcement Learning* and *Stochastic Control techniques* for the robust control and motion planning of complex *humanoid robots* (Agility Robotics' Cassie and Digit platforms)
- Implemented several *Distributed RL algorithms* (D4PG, TD3, DDPG, PPO, model-based RL) , combining the domains of machine learning with real-time data analysis and robotics.
- Currently developing a *novel robot learning pipeline* that uses reinforcement learning to imitate walking trajectories generated by reduced-order-models. *Inverse kinematics* used to translate from full-order to reduced-order and back.

Mavensoft Technologies — Jun 2017 – Sep 2017

Full Stack Web Development Intern

- Created responsive, mobile-first, *RESTful web app* used by teachers to manage classroom administration data
- Used Google APIs to link application data to Google Sheets and provide real-time updates of app data across multiple devices

PROJECTS

Apex - *Python Library for Deep Reinforcement Learning* — Jan 2019 - Present

- Modular implementations of continuous Deep RL algorithms
- Supports *distributed training*, real-time training graphs, *advanced logging*, *customized RL environments*
- Used by all researchers in OSU's Dynamic Robotics Lab
- Implemented in Python with PyTorch, Ray, Visdom

OSU Underwater Robotics Club — Oct 2018 - Present

- CS Team Lead responsible for directing software development and coordinating with with other sub-teams
- Implementing *object detection and recognition* in sensory subsystem of underwater ROV
- Developing *autonomous control* techniques to navigate ROV through unknown aquatic environment
- Using *NVIDIA Jetson TX2* and other embedded hardware for *online motion planning* and data processing

AI for Artwork - *Novel Technique for Visualizing Neural Networks* — Jun 2018 – Sep 2018

- Combines classical image filtering techniques with *input pixel optimization* to generate high resolution visualizations of pre-trained CNNs
- Implemented in Python with Caffe and OpenCV
- Re-implemented with TensorFlow and *contributed via open-source to Google Inc's Project Magenta*

Blood Smear Analyzer - *Tool for Diagnosing Hematological Disease* — Jun 2017 – Sep 2017

- Pure CV algorithm for counting number of blood cells in sample and analyzing their morphology
- Used *watershed technique*, bilateral filter, Split Bregman Method for *Total Variation Denoising*

SKILLS

Platforms/DevOps: Linux, AWS, Git, Docker, Kubernetes

Languages: Python, C/C++, JS/Node, Java, MATLAB

Libraries: NumPy, MuJoCo, Eigen, OpenCV, Boost

Frameworks: PyTorch, Ray, TensorFlow, Visdom