

# Amlsh Sivanantham

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## EDUCATION

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- 08.2017 - 05.2019 UNIVERSITY OF SOUTHERN CALIFORNIA  
**M.S. in Computer Science (GPA: 3.78)**  
*Concentration: Intelligent Robotics*
- 09.2013 - 06.2017 UNIVERSITY OF CALIFORNIA, SANTA CRUZ  
**B.S. in Computer Engineering (Honors)**  
**B.S. in Computer Science**  
Thesis: *Detecting Anomalies in Time-Series Data using Long Short-Term Memory Networks* - Advisor: Dr. Patrick Mantey

## SKILLS

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LANGUAGES: **Python**, C++, C, Java, JavaScript, Scheme, L<sup>A</sup>T<sub>E</sub>X, Bash, Verilog  
LIBRARIES: **TensorFlow**, PyTorch, OpenAI Gym, PyTorch, NumPy, Spacy, Matplotlib, Flask

## WORK EXPERIENCE

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- 06.2019 - PRESENT **NLP Engineer and Analytic Consultant**  
*Wells Fargo (Transitioned to Full-Time 11.2019)*  
Currently working using Natural Language Processing and Deep Learning for A.I. projects within Wells Fargo.
- 09.2017 - 06.2019 **Graduate Research Assistant**  
*University of Southern California - Robotic Embedded Systems Laboratory*  
Perform graduate research in Deep Reinforcement Learning and it's application to Robotics. Some of the areas I have worked on have been to learn to infer inverse dynamics of a system (system identification) and learning to integrate control theory with current deep reinforcement learning algorithms. I also participate in reading groups to be caught up with the current literature.

## PUBLICATIONS

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- W1.** V. Chockalingam, T. T. Sung, F. Behbahani, R. Gargeya, A. Sivanantham, and A. Malysheva. Extending world models for multi-agent reinforcement learning in malmo. In *Joint Proceedings of the AIIDE 2018 Workshops*. AIIDE, dec 2018

## PROJECTS

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### LEARNING INVERSE DYNAMICS OF A SYSTEM FOR DEEP RL (*USC RESL*)

Instead of having a RL policy learn a mapping from states to actions, we had it learn a mapping from states to desired states. We also learnt a inverse dynamics model concurrently from data generated by the policy. We found that the policy's performance was marginally worse than the standard approach.

### IMAGINATION AUGMENTED AGENTS FOR RUBIK'S CUBES (*Jeju DL Camp 2018, S. Korea*)

Participated in the Jeju Deep Learning Camp 2018 where I worked to reimplement the paper *Imagination Augmented Agents for Deep Reinforcement Learning* and adapt it to work for a Rubik's Cube OpenAI Gym environment that I wrote.

### ANIME SKETCH COLORING WITH SWISH-GATED RESIDUAL U-NETS (*USC CSCI 599 - Deep Learning*)

As our group project, we implemented a recent paper titled with the same name. We were able to show that the results of the paper very indeed valid. We were also the first implementation of this paper. The paper introduces a type of filtering mechanism between residual layers known as a swish layer. The paper uses them to learn realistic coloring of anime line-art.