SRIRAM SOMASUNDARAM

Website | Github | LinkedIn
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EDUCATION

Stanford University   *September 2019 - May 2021*
Master of Science in Computer Science

University of Southern California   *August 2015 - December 2018*
Bachelor of Science in Computer Science   GPA: 3.97/4.0
Summa Cum Laude, Dean's List (All Semesters)
National Merit Scholarship, Merit-based Presidential Scholarship (half tuition)

PUBLICATIONS

[1] Y. Lee*, S. Sun*, **S. Somasundaram**, E. Hu, and J. Lim, "Composing complex skills by learning transition policies with proximity reward induction," in *International Conference on Learning Representations*, 2019. [**pdf**][**website**].

[2] S. Sun*, H. Noh*, **S. Somasundaram**, and J. Lim, "Neural program synthesis from diverse demonstration videos," in *Proceedings of the 35th International Conference on Machine Learning*, 2018. [**pdf**][**website**].

[3] W. Jiang, M. J. Strohman, **S. Somasundaram**, S. Ayyangar, T. Hou, N. Wang, and E. D. Mellins, "pH-susceptibility of HLA-DO tunes DO/DM ratios to regulate HLA-DM catalytic activity," *Scientific Reports*, vol. 5, p. 17333, Nov 2015. [**pdf**].

RESEARCH EXPERIENCE

USC Cognitive Learning for Vision and Robotics Lab   September 2017 - Present
Supervised by **Prof. Joseph Lim**   *Los Angeles, CA*

· Worked on neural program synthesis from diverse video demonstrations (**ICML 2018**)
  – Contributed to our model architecture and training with a multi-task objective to induce meaningful latent representation and a two-path LSTM to summarize and capture diverging conditions in video.
  – Built a neural program executor for differentiable loss.
  – Built ViZDoom and Minecraft environments and supervised training.
· Enabled smooth skill composition in hierarchical reinforcement learning by transitioning between learned skills. Submitted a paper in review for **ICLR 2019**.
  – Contributed to the ideation of transition policies and our underlying motivation in the scope of HRL, implemented proximity predictors, and built Walker2D environments using MuJoCo.
· Researched voice conversion between male and female speech for a course project and received the best project award out of the class of 250 graduate students.
  – Investigated good latent spaces for audio, trained a CycleGAN between collections of male and female speech, and re-implemented a Deepmind paper, VQ-VAE.
· Leading a project on utilizing programs as high level task specifications and learning program guided policies.

USC Signal Analysis and Interpretation Lab   September 2015 - May 2016
Supervised by **Prof. Shrikanth Narayanan**   *Los Angeles, CA*

· Investigated transfer learning in vision tasks for application to emotion recognition and research on depression.

Stanford University   September 2013 - August 2015
*Supervised by **Prof. Elizabeth Mellins***   *Palo Alto, CA*

· Researched Adaptive Immunity pathways, published in **Nature's Scientific Reports**.
· Researched connection between H1N1 virus and Narcolepsy.
  – Sequenced single cells through cutting edge biochemical methods such as single cell sorting and barcoded PCR.
  – Manipulated big data sets of cell sequencing to visualize crucial information.

EXPERIENCE

Riot Games   February 2019 - August 2019
Associate Software Engineer   *Los Angeles, CA*

· Released the first monetized product from LoL Esports
· Utilized Kafka as a message queue in Go and migrated data platform from SQL to HBase

Riot Games   May 2018 - August 2018
Software Engineering Intern   *Los Angeles, CA*

· Built the frontend for the Rewards product on League Esports (**site**), a Hub for millions of Esports fans worldwide to stream esports content from YouTube/ Twitch and receive rewards based on analyzed watch metrics.
· Created the web app in ES6 and React with test frameworks, responsive layouts, multiple states, service discovery, authentication, and animations.
· Contributed to Riot-wide Go microservices.

Raytheon   May 2017 - August 2017
Software Engineering Intern   *Sunnyvale, CA*

· Trained a time-delay neural network for speech activity detection and speaker diarization tasks using Kaldi speech toolkit. Parallelized input processing and propagation through neural net for 8x speedup.

Quid   June 2016 - August 2016
Software Engineering Intern   *San Francisco, CA*

· Built a RESTful microservice to outsource company description data. Used a Flask web server in a Chef infrastructure with continuous integration with Redis as a key-value store and Amazon S3 for cloud data storage.
· Used Apache Spark and Scala to provide data analytics on Quid news networks from 500M news articles on Elasticsearch and data on MySQL.

TECHNICAL SKILLS

Programming Languages	Python, Java, C++, MySQL, Go, Javascript, HTML, CSS, Matlab LaTeX, NoSQL, Ruby, Scala, iOS, React-Native
ML Frameworks	Tensorflow, PyTorch, Theano
Tools and Visualization	MuJoCo, Pandas, Seaborn, Matplotlib
Operating Systems	Linux (UNIX), Macintosh, Windows