SRIRAM GOPALAKRISHNAN

1411 S Oakley PL, Tempe,AZ - 85281, USA | Ph:484-903-8807 | Email:sgopal28@asu.edu

EDUCATION

Ph.D. Computer Science with a focus on Automated Planning with Neural Networks
- Arizona State University (in-progress) May 2021
G.P.A. : 4.0

M.Sc. Computer Science with Thesis - Lehigh University, Bethlehem, PA May 2017
G.P.A. : 4.0

B.Sc. Electrical Engineering, B.A. in Computer Science - Lafayette College, Easton, PA 2010
G.P.A. : 3.72

SKILLS

- Well versed in Automated Planning, Neural Networks, Reinforcement Learning, Probabilistic Graphical Models, Natural Language Processing
- Programming Languages and Libraries: Proficient in Python, C++, C. Coded in Matlab,Java,R, and Simulink. Is experienced with Pytorch, Keras, TensorFlow, PyMC3, and SciKit Learn libraries.
- Knowledgeable about and Implemented code with design patterns for complex software projects.
- Worked extensively with Micro-controller/Embedded applications, both hardware and software. Programmed large scale embedded systems with sensor networks, distributed intelligence, and fail-safes for robust behavior
- Soft Skills: Conflict resolution, and negotiation. Project management and presentations.

RELEVANT GRADUATE LEVEL COURSES

- Graduate Courses : Statistical Machine Learning, Fundamentals of Statistical Learning, Human-Aware A.I., Data Mining, Intelligent Agents, Text Mining, Search Engines, Advanced Algorithms, Advanced Programming Techniques, Advanced Operating Systems, Bio-Computing.
- Online Courses : Machine Learning (on Coursera by Andrew Ng). Probabilistic Graphical Models (on Coursera by Daphne Koller)

ONGOING RESEARCH

- Learning user preferences using active learning: Asking fewer questions to learn a model of human preferences and beating uncertainty-based sampling techniques.
- Automated planning through graph embeddings: Embedding graphs of planning domains in euclidean space for automated planning.
- Embedding directed graphs in Euclidean space with potential fields: We address the problem of embedding the asymmetry of directed graphs by using a potential field function. One application is path planning in directed graphs. Work submitted to International Conference on Automated Planning and Scheduling (ICAPS-20); pending review.

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PUBLICATIONS AND PRESENTATIONS

- Gopalakrishnan, S., Soni, U., & Kambhampati, S. (2019,July). Feature Directed Active Learning. The Workshop on Explainable AI in Planning, ICAPS 2019, Berkeley, CA, USA

- Gopalakrishnan, S., & Kambhampati, S. (2019,July). TGE-viz : Transition Graph Embedding for Visualization of Plan Traces and Domains.https://arxiv.org/pdf/1811.09900.pdf. Complete system demonstrated at ICAPS 2019, Berkeley, CA, USA

- Zha, Y., Li, Y., Gopalakrishnan, S., Li, B., & Kambhampati, S. (2018, July). Recognizing Plans by Learning Embeddings from Observed Action Distributions. In Proceedings of the 17th International Conference on Autonomous Agents and MultiAgent Systems (pp. 2153-2155). International Foundation for Autonomous Agents and Multiagent Systems.

- Gopalakrishnan, S., Muñoz-Avila, H., & Kuter, U. (2018). Learning task hierarchies using statistical semantics and goal reasoning (Journal version). AI Communications (2018)

- Nguyen, C., Reifsnyder, N., Gopalakrishnan, S., & Munoz-Avila, H. (2017, August). Automated learning of hierarchical task networks for controlling minecraft agents. In Computational Intelligence and Games (CIG), 2017 IEEE Conference on (pp. 226-231). IEEE.

- Gopalakrishnan, S., "Learning Hierarchical Task Networks Using Semantic Word Embeddings" (2017). Theses and Dissertations. 2608. Lehigh University,PA, USA. https://preserve.lehigh.edu/etd/2608

- Gopalakrishnan,S., Muñoz-Avila,H., Kuter,U., Word2HTN:Learning Task Hierarchies Using Statistical Semantics and Goal Reasoning. *The IJCAI-2016 Workshop on Goal Reasoning.* AAAI Press. 2016. New York,NY,USA.

WORK EXPERIENCE

- **Design and Development Engineer** (Lutron Electronics) 2013- 2015
  + Managed the Embedded Engineering team for a large scale automated lighting and HVAC control system for home, and commercial building automation
  + Improved upon software architecture. Designed and Implemented a new communication protocol for the control system
  + Mentored new employees
- **Project Embedded Electrical Engineer** (Lutron Electronics) 2010-2013
  + Developed new features for a lighting control system, running on a 32-bit microcontroller.
  + Used design patterns to write robust code. Designed comprehensive test case scenarios for verification.
  + Worked with the manufacturing team to troubleshoots the production and hardware issues
  + Managed offshore development team for embedded software.
  + Supervised interns/co-ops

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PATENTS

- Digital messages in a load control system

http://www.patentsencyclopedia.com/app/20150295411
https://patents.google.com/patent/US20150295411A1/en

- Load Control system responsive to location of an occupant and mobile devices:

https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2016029165
https://patents.google.com/patent/WO2016029165A2/ko

REFERENCES

- Dr. Subbarao Kambhampati (Computer Science professor and Ph.D. research advisor)
  rao@asu.edu
- Dr. Satish Kumar Thittamaranahalli (Research Collaborator, Assistant Professor at University of Southern California)
  tkskwork@gmail.com / thittama@usc.edu
- Liron Cohen (Research Collaborator, Phd Candidate at University of Southern California)
  lironcoh@usc.edu
- Dr. Héctor Muñoz-Avila (Master's Thesis Advisor, Professor at Lehigh University)
  hem4@lehigh.edu
- Dr. Ugur Kuter (Senior Researcher at SIFT and research collaborator)
  ukuter@sift.net

CO-CURRICULARS

Certified Yoga Teacher (Vinyasa and Iyengar Yoga). Carpentry, Avid runner.