

# SRIRAM GOPALAKRISHNAN

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

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## EDUCATION

Ph.D. Computer Science with a focus on Sequential Decision Making and Human-Aware AI  
- Arizona State University (in-progress) December 2022  
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

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## SKILLS

- Automated Planning, Reinforcement Learning, Explainable AI
  - Programming Languages: Python, C++, C, Java  
ML libraries: Pytorch, TensorFlow, PyMC3, and SciKit-Learn libraries.
  - Completed CITI certification for responsible research. Conducted human subject experiments for Human Aware AI(HAI) research.
  - Knowledgeable about and Implemented code with design patterns for complex software projects. Worked with containers (Docker).
  - Extensive experience with Microcontroller/Embedded applications, both hardware and software. Programmed large scale embedded systems with sensor networks, distributed intelligence, and fail-safes for robust behavior
  - Full stack developer
  - Soft Skills: Conflict resolution, and negotiation. Project management and presentations.
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## PUBLICATIONS AND PROFESSIONAL SERVICE

- Gopalakrishnan, S., & Borrajo, D. (2022, June). Assignment and Prioritization Of Tasks With Uncertain Durations For Satisfying Makespans In Decentralized Execution. To appear In Proceedings of the 32nd International Conference on Automated Planning and Scheduling (ICAPS 2022)
- Gopalakrishnan, S., & Kambhampati, S. (2022, May). Minimizing Robot Navigation-Graph For Position-Based Predictability By Humans. To appear In Proceedings of the 22nd International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 2022)
- Gopalakrishnan, S., Verma,S., & Kambhampati, S. (2021,August). Synthesizing Policies That Account For Human Execution Errors Caused By StateAliasing In Markov Decision Processes. In the workshop on Explainable AI in Planning, ICAPS 2021.
- Gopalakrishnan, S., Soni, U., Thai, T., Lympieropoulos, P., Scheutz, M., & Kambhampati, S. (2021,August). Integrating Planning, Execution and Monitoring in the presence of Open World Novelities: Case Study of an Open World Monopoly Solver. In the workshop on Integrating

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Planning and Execution, ICAPS 2021. (*The associated AI agent was the top performer in the DARPA SAIL-ON program for the monopoly domain*)

- Gopalakrishnan, S., Cohen, L., Koenig, S., & Kumar, T. S. (2020, May). Embedding Directed Graphs in Potential Fields Using FastMap-D. In Thirteenth Annual Symposium on Combinatorial Search (SOCS).
- Borrajo, D., Gopalakrishnan, S., & Potluru, V. (2020,October). Goal Recognition via Model-based and Model-free Techniques. In the workshop on Planning for Financial Services (FinPlan), ICAPS 2020.
- Gopalakrishnan, S., Soni, U., & Kambhampati, S. (2019,July). Feature Directed Active Learning. In the Workshop on Explainable AI in Planning, ICAPS 2019.
- Gopalakrishnan, S., & Kambhampati, S. (2019,July). TGE-viz: Transition Graph Embedding for Visualization of Plan Traces and Domains. arXiv preprint arXiv:1811.09900. Complete system demonstrated at ICAPS 2019.
- 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., Munoz-Avila, H., & Kuter, U. (2016). Word2htn: Learning task hierarchies using statistical semantics and goal reasoning. In the 4th Workshop on Goal Reasoning. IJCAI,2021.
- Reviewer for the International Conference on Robotics and Automation (ICRA). May 2022. (Philadelphia, USA)

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## 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-Inspired Computing Algorithms.
- Online Courses : Machine Learning ( on Coursera by Andrew Ng). Probabilistic Graphical Models (on Coursera by Daphne Koller)

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## WORK EXPERIENCE

- **Summer Associate - AI/ML Research Team** (JP Morgan & Chase) 2021
  - + Worked on task scheduling for office teams using monte carlo tree search
  - + Incorporated human factors into scheduling algorithm for more realistic schedules
- **Summer Associate - AI/ML Research Team** (JP Morgan & Chase) 2020
  - + Worked on goal recognition for detecting client (financial) goals to offer better services
  - + Presented work at ICAPS workshop on Finance and Planning (FinPlan) 2020
- **Research Assistant - Yochan Lab** (Arizona State University) 2017- Current
  - + Working on human aware AI in the context of sequential decision making
- **Research Assistant - Insyte Lab** (Lehigh University) 2015- 2017
  - + Worked on learning Hierarchical Task Networks (HTN) from action traces using clustering and action embeddings.
- **Design and Development Engineer** (Lutron Electronics ) 2013- 2015
  - + Helped coordinate the embedded engineering team for a large scale automated lighting and HVAC control system for home, and commercial building automation
  - + Improved upon software architecture. Co-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>

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<https://patents.google.com/patent/WO2016029165A2/ko>

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## REFERENCES

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