

Abhinav Bhatia

Ph.D. student at University of Massachusetts Amherst | abhinavbhati@cs.umass.edu

INTERESTS

Artificial Intelligence, Reinforcement Learning, Real-time Planning, Robotics

EDUCATION

University of Massachusetts Amherst	3.94/4
<i>MS/Ph.D. in Computer Science, advised by Prof. Shlomo Zilberstein</i>	<i>Fall 2019 – Present</i>
Birla Institute of Technology and Science (BITS) - Pilani, Pilani Campus	9.27/10
<i>B.E. (Hons.) in Computer Science</i>	<i>Aug. 2011 – May 2015</i>

EXPERIENCE

Research Assistant	Fall 2019 - Present
<i>College of Information and Computer Sciences, University of Massachusetts Amherst</i>	
<ul style="list-style-type: none">At <i>Resource Bounded Reasoning</i> lab directed by Prof. Shlomo Zilberstein.Conduct research on meta-reasoning and meta-reinforcement-learning methods, aimed at making autonomous agents operate efficiently in real-time and with limited data.	
Research Engineer	June 2017 – July 2019
<i>School of Computing and Information Sciences, Singapore Management University</i>	<i>Singapore</i>
<ul style="list-style-type: none">Supervised by Prof. Pradeep Varakantham and Prof. Akshat Kumar.Worked on optimizing constrained resource allocation at city scale using deep reinforcement learning, which led to a publication at <i>International Conference on Automated Planning and Scheduling (ICAPS) 2019</i>.	
Software Engineer	August 2015 – June 2017
<i>WalmartLabs</i>	<i>Bengaluru, India</i>
<ul style="list-style-type: none">Was part of <i>Operations, Analytics & Research</i> team for supply-chain division of Walmart's eCommerce.Developed an Elasticsearch based distributed database for data analysis.Developed a deep-learning based system for anomaly-detection in large live incoming data streams.	
Software Development Engineering Intern	June. 2015 – June. 2015
<i>Amazon</i>	<i>Bengaluru, India</i>
<ul style="list-style-type: none">Worked on offline experience for Prime Video.Worked on optimizing content load time for Prime Video on Kindle tablets.	

PUBLICATIONS

Samer B. Nashed, Justin Svegliato, **Abhinav Bhatia**, Stuart Russell and Shlomo Zilberstein (2022). "Selecting the partial state abstractions of MDPs: A metareasoning approach with deep reinforcement learning." In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2022)*.

Abhinav Bhatia, Justin Svegliato, Samer B. Nashed and Shlomo Zilberstein. "Tuning the Hyperparameters of Anytime Planning: A Metareasoning Approach with Deep Reinforcement Learning". In *Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS 2022)*.

Abhinav Bhatia, Philip S. Thomas, and Shlomo Zilberstein. "Adaptive Rollout Length for Model-Based RL Using Model-Free Deep RL". In *(ArXiv 2022)*.

Abhinav Bhatia, Justin Svegliato and Shlomo Zilberstein. "On the Benefits of Randomly Adjusting Anytime Weighted A*". In *Proceedings of the International Symposium on Combinatorial Search (SoCS 2021)*.

Abhinav Bhatia, Justin Svegliato and Shlomo Zilberstein. "Tuning the Hyperparameters of Anytime Planning: A Deep Reinforcement Learning Approach". In *ICAPS Workshop on Heuristics and Search for Domain-independent Planning (HSDIP 2021)*.

Abhinav Bhatia, Pradeep Varakantham and Akshat Kumar. "Resource Constrained Deep Reinforcement Learning". In *Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS 2019)*.

TEACHING EXPERIENCE

CS383 Artificial Intelligence

Responsible for designing quizzes, clarifying students' doubts and holding office hours

UMass Amherst

Fall 2022

MISC.

- Program committee member, AAAI 2023.
- Paper reviewer, AIJ 2021.
- As a member of IEEE BITS-Pilani chapter, conceptualized, developed and organized an AI bot making competition for a video game at college tech festival 2014.
- Won 1st prize for project *PC 3D Gesture Interface using Kinect* in design appliances category at BITS-Pilani tech festival 2014.
- Offered *Kishore Vaigyanik Protsahan Yojana* fellowship, which is an initiative by govt. of India to encourage young students to pursue a career science research, 2010.

PROGRAMMING SKILLS

Languages: Experienced in Python, Julia, C/C++, Java. Familiar with C#, SQL

Framworks: OpenAI Gym, PyTorch, FluxML, Tensorflow, CPLEX, Elasticsearch, Unity3D

LINKS

Webpage: <https://abhinavbhatia.me>

Github: <https://github.com/bhatiaabhinav>

Google Scholar: <https://scholar.google.com/citations?user=Y53CNrIAAAAJ&hl>

CONTACT INFORMATION

Phone: +1 (413) 409 1966, +1 (413) 461 0093

Email: abhinavbhati@cs.umass.edu; abhinav.bhatia.me@gmail.com