

Abhinav Bhatia

2nd year MS/Ph.D. Student, University of Massachusetts Amherst | College of Information and Computer Science



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About: <https://bhatiaabhinav.github.io/>

Interests

Artificial Intelligence, Sequential Decision Making, Reinforcement Learning

Experience

Research Engineer at Singapore Management University, Singapore

Jun 2017 – Jul 2019 (2 years)

- Worked on optimizing constrained resource allocation at city scale using deep reinforcement learning. *Bhatia, A.; Varakantham, P.; and Kumar, A; ICAPS 2019. Resource constrained deep reinforcement learning.*

Software Engineer at @WalmartLabs, Bangalore, India

Aug 2015 - Jun 2017 (2 years)

- As part of Operations, Analytics & Research team for supply-chain division of Walmart's eCommerce business, developed a deep-learning based system for anomaly-detection in live incoming data streams.

Software Development Engineer - Intern at Amazon, Bangalore, India

Jan 2015 - Jun 2015 (6 months)

- Worked on client-side caching & offline experience for Prime Video.

Education

University of Massachusetts, Amherst, MA (2019-Present)

MS/Ph.D. student, Computer Science.

Selected Coursework: Machine Learning (CS689, Fall 2019), Reinforcement Learning (CS687, Fall 2019), Artificial Intelligence (CS683, Spring 2020), Advanced Information Assurance (CS660, Fall 2020)

Birla Institute of Technology and Science (BITS), Pilani, India (2011 - 2015)

Bachelor of Engineering (B.E.) (Hons.), Computer Science. CGPA: 9.27/10

Skills

Programming Languages: Python, C, C#, C++, Java, SQL. **Frameworks & Tools:** PyTorch, TensorFlow, Keras, CPLEX, Elasticsearch-Kibana, Unity3D.

Projects

- Monitoring Factory Workers' Performance with Kinect (BITS Pilani, 2014):** Used deep learning to measure the quality of activity of factory workers. It could perform well in varying lighting conditions, distances and orientations of workers w.r.t. the Kinect sensor.
- Study Project on Age Invariant Face Recognition (BITS Pilani, 2014):** Studied existing solutions for age-invariant face recognition. Explored new approaches like Deep Learning, Support Vector Regression, Principal Component Analysis, Locality Sensitive Hashing to solve the problem.
- Tracking finger gestures using Kinect to control a PC (BITS Pilani, 2014):** Won 1st prize in BITS technical festival 2014 in design appliances category.
- Compiler Construction (BITS Pilani, 2014):** Developed a compiler to compile a toy language to 8086 assembly code.
- Many-to-one P2P Media Streaming (BITS Pilani, 2013):** Designed and implemented a UDP based many-to-one media streaming protocol.
- Context aware home automation system (BITS Pilani, 2013):** Involved tracking humans using motion detection, blob detection, skin detection and stereo cameras depth extraction. Presented a related paper in BITS-Pilani annual technical festival 2013.

Other Personal Projects

- A Github repository of popular modern deep RL algorithms such as DQN, DDPG, SAC and their improvisations. <https://github.com/bhatiaabhinav/RL-v2>
- Prey-Predator co-evolution simulation on organisms with neural network brains (2014)
- Tennis player bot using Fuzzy Reinforcement Learning (2014)
- P2P video calling software over TCP/IP protocol (2013)

Misc

- As a member of IEEE BITS-Pilani chapter, conceptualized, coordinated, and developed a video game platform for an AI bot making competition in BITS Technical Festival 2014.

Links

Personal webpage: <https://bhatiaabhinav.github.io/>

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

Pre-2015 Projects: <https://abhinavcodes.wordpress.com>