# Ashwin R Bharadwaj

**Website:** bit.ly/4bAOHqE  240-743-9181

✉ bharadwaj.ash@northeastern.com  in linkedin.com/in/ashwin-r-bharadwaj  ⌂ github.com/Its-a-me-Ashwin

## Technical Skills

**Languages**: C++, Python, Java, GoLang, Typescript
**Technologies**: PyTorch, TensorFlow, React.js, Angular, Flask, Unity, ROS
**Concepts**: Artificial Intelligence, Machine Learning, Robotics, Operating System, Cloud Computing

## Education

**Northeastern University**                                                    Expected May 2025
*Masters of Science in Artificial Intelligence (GPA: 3.75 / 4.00)*                 *Boston, MA*
- **Teaching Assistant for Foundations of Artificial Intelligence for 4 semester.**
- **Founder of the Khoury Robotics Club.**

## Work Experience

**Cisco Systems**                                                            Jan 2021 – Aug 2023
*Software Engineer*                                                          *Bangalore, India*
- Implemented backend framework in Golang that processed CRUD requests efficiently while synchronizing across 100s of nodes and increased throughput by 48%.
- Developed a ML bases system to proactively detect the load on servers. This was integrated into "Intersight" to automatically start and stop servers based on the anticipated load increasing power efficiency by 8.2%.

**Microsoft**                                                               Jan 2019 – Aug 2021
*Research Intern*                                                           *Bangalore, India*
- Built a machine learning model that took advantage of a graph structure to connect images/pictures/sculptures depicting historical events and connecting them with the textual description of the event.
- Mentored a team of interns and built a web app that visualizes graph based algorithms using ReactJs, GoLang, python for internal use.

## Major Graduate Projects

**WaltZ (Bipedal robot)** | *C++, Python, Reinforcement Learning, SkLearn, Onshape*
- Designed, 3D printed and simulated a bi pedal walking robot with 6 DoF.
- Trained the robot to maintain its balance on a shaking table using an agent trained with Soft Actor-Critic algorithm and compared it with a Model-Based Approach with various horizon limits.

**Speedy Navigation of Indoor Environments with Limited Sensory Inputs** | *Pytorch, C++, Robotics, INV, Stereoscopy*
- Designed and implemented an advanced algorithm that allows robots to navigate very quickly in closed environments.
- Employed POMDPs and CNNs modified to be equivalent with tunable kernels at various angles to process the sensory inputs.
- Designed a cost effective universal mobile robot that focused on reliability and ease of use.

## Publications

**Ashwin Bharadwaj**, Anio Zhang, Rajagopla Venkat. *Shapeshifting Coloring Problems: An Interactive Tiling Assignment*. EAAI 2025.(Awaiting publication)

**Anio Zhang**, Ashwin Bharadwaj, Rajagopla Venkat. *Escape the Castle: Estimate the behaviour using MDP problem*. EAAI 2025.(Awaiting publication)

**A. R. Bharadwaj**, Anio Zhang, "Efficient Inverse Kinematics for High-DoF Robots: A Kolmogorov-Arnold Network Approach", Northeast Robotics Colloquium (NERC), Amhrest, USA, 2024.

**A. R. Bharadwaj**, S. S. Chandra, D. S. Nair, A. R. Hatim and A. Ravikumar, "Automated mythological scene recognition using machine learning and graphs", 2020 International Conference on Artificial Intelligence and Signal Processing (AISP), Amaravati, India, 2020, pp. 1-5, Jan 2020.

**Ashwin R. Bharadwaj**, Hardik Gourisaria, Hrishikesh Viswanath, "Video Frame Rate Doubling Using Generative Adversarial Networks", Computer Communication, Networking and IoT (ICICC 2020), Bengaluru, India, Aug. 2020