Enna Sachdeva

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https://ennasachdeva.github.io/

EDUCATION

Oregon State University (OSU), Collaborative Robotics and Intelligent Systems **OR, USA**
Master of Science in Robotics, ***GPA: 3.82/4.00*** **Sept 2018- June 2020**
Selected Coursework: • Deep Learning • Sequential Decision Making • Autonomous Agents

International Institute of Information Technology (IIIT-Hyderabad) **Hyderabad, India**
Master of Science in Robotics, ***GPA: 4.00/4.00*** **Jan 2016- July-2018**
Selected Coursework: • Machine Learning • Computer Vision • Mobile Robotics

YMCA University of Science and Technology **Faridabad, India**
Bachelor of Technology; Electronics and Communication Engineering, ***GPA: 3.65/4.00*** **Aug 2010- May-2014**
Selected Coursework: • Data Structure • Embedded System • Computer Networks, Computational Techniques

WORK EXPERIENCE

Graduate Research Assistant, *Autonomous and Distributed Intelligence (AADI) Laboratory, OSU* **Dec 2018 - Present**

- Currently working on an Industry sponsored project to address temporal credit assignment in long time horizon tasks, in reinforcement learning (OPEN-AI gym).
- Leveraging reward shaping, evolutionary strategies and hierarchical methods to determine which rewards matter the most in long-horizon tasks with sparse rewards.

Aspiring Woman Entrepreneur*, University of Texas at Austin, Austin, Texas* **April 2018 - June 2018**

- One among 16 female entrepreneurs selected all across India and fully funded by the US State Government.
- Led a team of 6 to develop international Business strategies and commercialize a product based on my design of an In-Pipe climbing robot, across USA, India, and Sweden.
- Managed to make contacts, get funding offers and collaboration opportunities with startups and research Institutes.

Graduate Teaching Assistant, *IIIT-Hyderabad* **Jan - May 2017**

- Provided assistance to 25 Graduate students, formulated assignments, course content for *Introduction to Robotics.*
- Delivered lectures on path planning, motion planning and dynamics & controls of robots.
- Collaborated on Robotics projects with several Graduate and Undergraduate students' teams.

Electronics Engineer*, Havells India Limited, Noida, India* **Jun 2014 - July 2015**

- Served as a key member on the core field team working on designing power efficient LED power supplies, within a small form factor, while maintaining a trade-off between cost and performance.
- Autonomously organized and expedited the design, development, large scale production of one of the highly sold LED products of the company.
- Coordinated project efforts between software engineers, mechanical designers, electronics engineers, project managers, vendors, and subcontractors

RELEVANT ACADEMIC PROJECTS

Autoencoders to enhance Multiagent Coordination in a Tightly-Coupled Domain, *OSU* **Jan 2018-Present**

- Obtained multiagent coordination using decentralized Deep deterministic policy gradient, in a partially observable tightly coupled multiagent system.
- Achieved comparable performance by reducing the dimensionality of the state space to 1/4th of the original state space, using autoencoders.

Distributed Solutions to Temporally-Coupled Sequential Tasks, *OSU* **Jan 2018-Present**

- Formulated hierarchical based multi-reward reinforcement learning approach to solve ill-defined with no formal mathematical structure of reward.
- Achieved outstanding performance over baseline algorithm CCEA, in finding optimal policies for complex sequential tasks in a cooperative multiagent environment.

- Submitted paper to *International Symposium on Multi-Robot and Multi-Agent Systems (MRS-2019)*.

Recurrent Multiagent Deep Deterministic Policy Gradient with Difference Rewards, *OSU* **Jan 2018-Present**

- Leveraged RNNs with MADDPG to address partial observability in a multiagent environment.
- Achieved notable performance improvement of RMADDPG with reward shaping using Difference Reward w.r.t baseline MADDPG.

Localization and Planning of Autonomous Car, *IIIT-Hyderabad* **May 2018 - July 2018**

- Implemented ORBSLAM2 for localization and planning of a driverless car by fusing data from Stereo, LIDAR, IMU, GPS. This project was in collaboration with MATHWORKS, India

Correcting distorted AES Keys obtained from cold boot attack, *Scientific Analysis Group* **June 2013 - Dec 2013**

- Advanced an error-correcting algorithm to achieve 85% efficiency in correcting the distorted Advanced Encryption Standard (AES) keys.
- Successfully tested in real-time on encryption system 'TrueCrypt'.
- Accepted publication in *IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT- 2015).*

For More Projects: https://ennasachdeva.github.io/ennasachdeva.github.io/projects/

SPECIALIZED SKILLS

Programming Languages: Python (*Advanced*), Cython (*Intermediate*), C (*Advanced*), C++ (*Basic*), MATLAB (*Advanced*)

Robotics: ROS (*Intermediate*), OpenCV (*Intermediate*), Optimization- fmincon, Cvex (*Advanced*)

Artificial Intelligence: TensorFlow (*Intermediate*), Pytorch (*Advanced*), Jupyter Notebook (*Advanced*), OpenAI Gym (*Advanced*)