

Rishav Chourasia

B.Tech - Computer Science and Engineering
Indian Institute of Technology Guwahati

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Education

Year	Degree / Certificate	Institute / Board	CGPA/Percentage
2014 - 2018	B.Tech	Indian Institute of Technology, Guwahati	9.26 / 10.0
2014	Senior secondary	CBSE board	91.6%
2012	Secondary	ICSE board	96.2%

Experience

- Research Intern at Max Planck Institute for Software Systems** *Nov 2018 - Feb 2018*
As part of Machine Teaching group, I studied properties of committee voting rules and their manifestation when applied to ensemble based Reinforcement learning. *goo.gl/ai42xk*
- Software Developer at Amazon India Development Cell** *Summer 2017, July 2018 - Nov 2018*
Working with Transaction Risk Management team, I improved Amazon wide Fraud Detection service called FORTRESS by fixing bugs, helping fulfill DevOp requirements for new marketplace deployments, and creating utilities for tracking off-team config changes in the platform. *goo.gl/yo88zd*
- Research Intern at Hanyang University, ERICA** *Summer 2016*
In Computer Vision and Fuzzy Systems Lab, I worked on extending reduction techniques in higher order fuzzy sets for multidimensional case. *goo.gl/JAoz5B*

Publications

- Unifying Ensemble methods for Q-learning via Social Choice Theory** *IJCAI 2019 (Review)*
Rishav Chourasia, Dr. Adish Singla *goo.gl/19xxF1*
- Optimal Swarm RL: An Improved Deep Exploration Strategy** *(Preprint)*
Rishav Chourasia *goo.gl/qsFUTH*
- Visualization of 2D IT2 Memberships using GT2 Membership Functions** *IFSA 2017*
Rishav Chourasia, Vaibhav Saxena, Nikhil Yadala, Dr. Frank Rhee *goo.gl/bQPxbi*
- Type Reduction Techniques for Two-dimensional Interval Type-2 Fuzzy sets** *FUZZ-IEEE 2017*
Vaibhav Saxena, Nikhil Yadala, Rishav Chourasia, Dr. Frank Rhee *goo.gl/jxuyhj*

Projects

- Dynamic walking gait on a humanoid bot** *July 2016*
Robotics Club, IIT Guwahati
Using DDPG on a virtual MuJoCo model of our 3D printed bipedal bot, we simulated human-like gait.
- Implementation of Reinforcement Learning algorithms** *Apr 2017*
Implemented Q-learning, SARSA, Deep Q-learning variants like DDQN, Recurrent DQN and Bootstrapped DQN. *goo.gl/LqvKLc*
- Particle Swarm Optimization for super fast convergence in RL** *Jan 2017*
By using PSO black box optimization heuristic, experimented towards significantly cutting training time on simple RL environments. *goo.gl/chcR4Y*
- Dynamic Resource allocation for Fire Incidents** *Mar 2018*
Artificial Intelligence course *goo.gl/RNigVp*
Using the San Diego government data-set for reported fire incidents, we trained multi-agent RL algorithms to optimize patrol trajectories. For the purpose, we modified Pommerman, an open multi-agent environment, to represent the zipcode based grid-world map of San Diego.
- Monte Carlo algorithm for playing Super Mario Bros** *Oct 2016*
Using lua based FCEUX simulator, implemented ϵ -soft Monte Carlo algorithm for learning to play Super Mario Bros. *goo.gl/vbrV1j*

Fellowships

- **Research Fellowship**
Max Planck Institute for Software Systems, 2018
- **Summer Research Fellowship Program**
Indian Academy of Sciences, 2016

Technical skills

- **Programming languages** : C, C++, Python, Java, Bash, Lua, Matlab.
- **Web technologies** : Django, Flask, Jekyll.
- **Database management** : MySQL, Neo4j, MongoDB, Sqlite3.
- **Miscellaneous** : Git, OpenCV, OpenAI gym, TensorFlow, Torch, PyTorch.
- **Robotics** : ROS, V-rep, Gazebo, Arduino.

Positions of Responsibility

- **Manager**, Robotics Club, IIT Guwahati *Jan 2016 - April 2017*

Achievements

- **Topped Department of Chemical Engineering** in the first year (CPI- 9.83) and was offered a change to Computer Science Department.
- Was the leader of the **winning team of Robothon, Kolkata**, organized **under Robofest by IIIT Hyderabad** in top 5 cities of Kolkata, Delhi NCR, Bombay, Hyderabad, and Bengaluru.
- Was the leader of the team that secured **2nd position in IoT hackathon** organized by Bolt IoT in collaboration with Techniche, at IIT Guwahati.
- **Secured 3rd position** in the image processing competition held under Kriti 2016, Inter Hostel Management Cup, IIT Guwahati.
- Got **AIR-3890** in JEE (advanced) 2014 and **AIR-4126** in JEE (mains) 2014 (**top 0.3% among 1.4 million candidates**).
- Was the **school topper among 300+ students** in class 10 ICSE examinations, and achieved a **district rank of 5**.

Extracurriculars

- **Conferences** : Gave oral presentation at IFSA-SCIS 2017 conference held in Japan.
- **Robotics Workshops** : Helped conduct workshops on image processing and basic hands-on robotics for undergraduate students.
- **Mentor** : Was a mentor for sophomore and junior year robotics club members.
- **Blogging** : Maintain a blog on stuff I find interesting.

Key courses taken

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| • Artificial Intelligence | • Networks and Communication |
| • Data Structures and Algorithms | • Optimization Theory |
| • Probability Theory and Random Processes | • Software Engineering |
| • Economics and Algorithmic Game Theory | • Information Retrieval |

References

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|---|---|
| • Asst. Prof. Rashmi Dutta Baruah
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