

RASHMEET KAUR NAYYAR

Ph.D. student in Computer Science,
Arizona State University

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EDUCATION

Ph.D. in Computer Science, GPA - 3.93/4.0

Fall 2018 - present

Arizona State University, Tempe, US

B.E. in Information Technology, GPA - 3.51/4.0

Fall 2013 - Spring 2017

Pune Institute of Computer Technology, India

RESEARCH INTERESTS

Artificial Intelligence: First-Order Open-Universe Probabilistic Reasoning, Hierarchical Planning with abstractions

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Arizona State University, United States

Fall 2018 - Present

Autonomous Agents and Intelligent Robotics Lab, advisor: Dr. Siddharth Srivastava

- Developing an automated physics-based AI system to detect and identify intergalactic clouds
- Exploring a Graphical model-based Open-Universe Probabilistic Programming approach developed in Bayesian Logic (BLOG) with inference using Markov Chain Monte Carlo methods in Java
- Analyzing UV Spectra obtained from the Cosmic Origins Spectrograph aboard the Hubble Space Telescope
- Collaborating with Dr. Sanchayeeta Borthakur at the School of Earth and Space Exploration, ASU

Graduate Student Assistant, Arizona State University, United States

Fall 2018

- Enriched student experience for the course “Intro to Human-Computer Interaction” under Dr. Robert Atkinson

Application Developer, BNY Mellon Technology, India

Fall 2017

- Developed the DORA Application from scratch for the Bank of New York Mellon using Java, AngularJS, Jasmine, Karma, Maven, Grunt, Jenkins, and Kanban agile methodology on NEXEN cloud-based platform

Research Project Intern, Innobytes Technologies Pvt. Ltd., India

Spring 2017

- Tackled the problem of inaccurate prediction of tags for audios in MagnaTagATune dataset (*Keras, Tensorflow*)
- Achieved an AUC-ROC score of 0.886 through CNN & CRNN deep neural network implementations [Github](#)

AWARDS, PUBLICATIONS

- Won the prestigious Chambliss Student Academic Achievement award for presenting research at the 234th summer meeting of the American Astronomical Society (AAS) in 2019. [Poster](#)
- Presented and published a paper on “Content-based auto-tagging of audios using deep learning” at the IEEE International Conference on Big Data, IoT, and Data Science (BIGDATA) 2017, Pune. [Paper](#)

RELEVANT PROJECTS

Vision-based Manipulator movement with Fetch

- Implemented a visual-feedback based method to guide the Fetch mobile manipulator’s end-effector to reach the target object without using AR-markers [Presentation](#)

Comprehensive implementation of AI methods in Pacman Environment

- Created a Pacman in a multi-agent environment using DFS, BFS, UCS, A* search, minimax, expectimax, and alpha-beta pruning in Python
- Developed task plans for Pacman agent using the PDDL domain and problem for different scenarios in the game

Card Shuffling using Markov chains

- Evaluated overhand, top-to-random, Knuth, transposition, thorp, and riffle card shuffling techniques [Presentation](#)

Denosing and Stacked Autoencoders

- Built a denosing autoencoder and evaluated its denosing capabilities with different noise levels
- Trained a stacked autoencoder layer-by-layer in an unsupervised fashion, & fine-tuned the network with classifier

TECHNICAL SKILLS

Programming Languages - Python, Java, C++

Frameworks, tools, & technologies - Git, scikit-learn, NumPy, ROS, Tensorflow, Keras, SQL, MongoDB, JavaScript

Coursework - Artificial Intelligence, Markov Chain Monte Carlo, Perception in Robotics, Fundamentals of Statistical Learning, Statistical Machine Learning, Theory of Computation, Data Structures & Algorithms