

Arpit Kapoor

Data Scientist

An aspiring Data Scientist proficient in machine learning and python programming, with demonstrated familiarity with large scale data gathering, analysis tools and generating insight into data using a wide range of ML algorithms.

EXPERIENCE

3Qi Labs, Hyderabad—Data Scientist

NOV 2019 - Present

Project: **Data Anomaly Detection using machine learning**

Key Responsibilities:

- Used Machine Learning to detect anomalies in data at large scale.
- Highlight data quality issues in data such as referential integrity failure using machine learning.
- Exploratory Data Analysis (EDA) to generate data analysis reports.
- Develop and maintain big data analysis pipelines in PySpark and hadoop.
- Create and maintain visualization and analysis suite in Kibana and elasticsearch.

Bomotix, Hyderabad— Machine Learning Developer

JAN 2019 - NOV 2019

Project: **Player Tracking and Pose Estimation in Sports Videos**

Key Responsibilities:

- Develop Deep learning pipelines for computer vision applications including object detection, object tracking and human pose estimation.
- Productionised the models and code for deployment with Google cloud using Kubernetes
- Developed new procedures for requirements gathering, testing, scripting and documentation to strengthen quality and functionality of applications.

The University of Sydney, NSW Australia— Research Intern (Machine Learning)

JUN 2018 - AUG 2018

Area of Research: **Bayesian Neural Networks using MCMC**

Supervisor: Prof Sally Cripps (Centre for Translational Datascience)

Key Responsibilities:

- Research and develop Bayesian machine learning models including deep neural networks using Markov Chain Monte Carlo samplers.
- Part of three research project; all published in reputed international Journals

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Links: [Medium](#) [Website](#)

SKILLS

Programming languages

Python, C++, and R

Data Technologies

Hadoop, PySpark, ElasticSearch

Machine Learning

TensorFlow, PyTorch, Apache MxNet,
Scikit-learn

Computer Vision

OpenCV

Data Visualization

Kibana, Tableau

ACHIEVEMENTS

Completed 3 months fully compensated Research Internship at USyd

Secured a **Gold, 2 silver and a bronze** medal in **RoboGames'17, USA** in humanoid league

Secured **3rd position** in IEEE/RSJ IROS 2017 Humanoid Application Challenge, held in Vancouver, Canada.

Recipient of **WATConsult Innovation Award** in BITS ATMOS'16 for Humanoid Teleoperation project.

Selected for **Engineering the Eye 5 Hackathon**(June 2016), organised by LVPEI, Hyd

5 Publications in Top tier Journals including IEEE and Elsevier

EDUCATION

SRM Institute of Science and Technology, Chennai — *B.Tech Computer Science and Engineering*

JUL 2015 - MAY 2019

CGPA: 9.05

Delhi Public School, Agra, Uttar Pradesh — CBSE Sr. Secondary

APRIL 2013 - MARCH 2015

Stream: Science (94.6%)

CO-ACADEMIC ACTIVITIES

SRM Team Humanoid, SRM Institute of Science and Technology — *Team Leader*

SEP 2015 - PRESENT

Managed the University Humanoid Robotics Team

Developed software packages for humanoid robotic systems.

Represented the University and won several accolades in various international humanoid robotics competitions.

PROJECTS

Smart Device Grouping

Determine the owners of various smart devices in a home using advanced feature engineering and clustering techniques on device usage patterns.

Person Detection and Tracking

Developed an end-to-end pipeline for detecting players in sports videos and tracking them throughout the videos. Trained Yolo V3 for person detection while a Siamese Re-Id Network and DeepSORT was used for tracking.

Hierarchical Deep Reinforcement Learning for Humanoids

Hierarchical Reinforcement learning inspired approach used to teach a higher order complex task, such as solving a maze, to a humanoid.

Bayesian neural Transfer Learning

Transfer Learning for Bayesian neural networks using Markov Chain Monte Carlo (MCMC) sampling scheme published in Neuroevolution.

Bayesian neuroevolution

Parallel multi-core Evolutionary MCMC algorithm for Deep neural network models

PUBLICATIONS

“Surrogate-assisted Bayesian inversion for landscape and basin evolution models”, *Geoscientific Model Development*, 13(7):2959-2979, July 2020

“Surrogate-assisted parallel tempering for Bayesian neural learning”, *Elsevier Engineering Applications of Artificial Intelligence*, Volume 94, 2020, 103700, ISSN 0952-1976

“Bayesian neural multi-source transfer learning”. *Neurocomputing*, 378, 54-64.

“Teleoperation of a Humanoid Robot with Motion Imitation and Legged Locomotion”, in *IEEE International Conference on Advanced Robotics and Mechatronics 2018*.

“Dynamic Lateral Balance of humanoid robot on unstable surface”, *IEEE International Conference On Electronics, Communication, Computer Technologies and Optimization Techniques 2017*.

“Reinforcement Learning Methods and Approaches for Humanoid Robotics”, 4th *International Conference on Artificial Intelligence and Evolutionary Computations in Engineering Systems*. (Conference Presentation)