# Arpit Kapoor

## PhD Candidate

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Google Scholar

## EDUCATION

**University of New South Wales,** Sydney — *Doctor of Philosophy*

AUG 2022 - PRESENT

Bayesian Deep Learning for Spatio-temporal modelling with applications in earth and environmental science

Funded By UNSW Sydney and ARC Training Centre in Data Analytics for Resources and Environment (DARE)

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

JUL 2015 - MAY 2019

CGPA: **9.01**

## EXPERIENCE

**Quince,** Hyderabad—*Data Scientist*

MAR 2022 - AUG 2022

Key Responsibilities:

- Working on data science use cases for improving customer retention by identifying key drivers of repeat behaviour
- Building regressive models for predicting and optimising logistics cost in online retail

**3Qi Labs,** Hyderabad—Jr *Data Scientist*

NOV 2019 - NOV 2021

Key Responsibilities:

- Implemented an LSTM Autoencoder based Time-series anomaly detection approach that improved the overall performance by 40% over the previous approach
- Developed ML workflows to automate detection of anomalous data in ETL data pipelines for our clients
- Incorporated MLOps practices to optimize the ML workflow with MLFlow and containerized deployment via Docker

**Bomotix,** Hyderabad— *Machine Learning Developer*

JAN 2019 - NOV 2019

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

Key Responsibilities:

- Developed Deep Learning based Computer Vision models for object detection, object tracking and human pose estimation
- Maintained the CI/CD pipelines for various deep learning model deployment
- Led the Module documentation and requirement gathering effort

## PUBLICATIONS

**Arpit Kapoor**, Anshul Negi, Lucy Marshall, Rohitash Chandra. **Cyclone trajectory and intensity prediction with uncertainty quantification using variational recurrent neural networks** (Ongoing project)

**Arpit Kapoor,** Eshwar Nukala, and Rohitash Chandra. **Bayesian neuroevolution using distributed swarm optimization and tempered MCMC.** *Applied Soft Computing* (2022): 109528.

Rohitash Chandra, Danial Azam, **Arpit Kapoor**, and R. Dietmar Müller, **Surrogate-assisted Bayesian inversion for landscape and basin evolution models.** *Geoscientific Model Development* 13, no. 7 (2020): 2959-2979.

Rohitash Chandra, Konark Jain, **Arpit Kapoor**, and Ashray Aman**. Surrogate-assisted parallel tempering for Bayesian neural learning.** *Engineering Applications of Artificial Intelligence 94 (2020)*: 103700.

Rohitash Chandra and **Arpit Kapoor. Bayesian neural multi-source transfer learning.** *Neurocomputing* 378 (2020): 54-64.

Aditya Sripada, Harish Asokan, Abhishek Warrier, **Arpit Kapoor**, Harshit Gaur, Rahil Patel, and R. Sridhar. **Teleoperation of a humanoid robot with motion imitation and legged locomotion.** In *2018 3rd International Conference on Advanced Robotics and Mechatronics (ICARM)*, pp. 375-379. IEEE, 2018.

Sripada, Aditya, Abhishek Warrier, **Arpit Kapoor**, Harshit Gaur, and B. Hemalatha**. Dynamic lateral balance of humanoid robots on unstable surfaces.**

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

JUN 2018 - AUG 2018

Area of Research: **Bayesian Machine Learning**
Supervisor: Prof Sally Cripps and Dr Rohitash Chandra

Key Responsibilities:

- Developed Bayesian methods for neural networks and geoscientific models using parallel Markov Chain Monte Carlo (MCMC) methods
- Projects worked on: Parallel MCMC methods for Neural Learning, Bayesian Transfer Learning, and Surrogate-assisted parallel MCMC

## LEADERSHIP

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

SEP 2015 - JUN 2019

- Led the University Humanoid Robotics team of 22 members at several international events
- Developed algorithms and software packages for control of humanoid robotic systems in Python and C++ using Robot Operating System.
- Represented the University and won several accolades in various international robotics competitions.

In 2017 *International Conference on Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT)*, pp. 1-6. IEEE, 2017.

## SKILLS

**Programming**
Python, R, and C++

**Machine Learning Expertise**
*Bayesian methods* - Bayesian Deep Learning, MCMC and Variational Inference
*Deep Neural Networks* - CNN, LSTM, Autoencoders, Seq2Seq models
*Tree-based models* - Random Forrest and Gradient Boosting
*Deep Reinforcement Learning*

**Frameworks**
*Deep Learning* - Tensorflow and PyTorch
*ML* - Scikit-learn, Apache Spark MLlib,
*MLOps* - MLFlow
*Model Interpretation*- LIME, SHAP

**Cloud Technologies**
AWS cloud, Azure cloud

**Other Skills/Technologies**
Docker, Bash

## ACHIEVEMENTS

Recipient of **research internship grant** from the **University of Sydney**

In top **1% students** who received University Excellence scholarship during the first year of graduate studies

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

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

Recipient of **WATConsult Innovation Award** in BITS ATMOS'16, Hyderabad