ABOUT

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LANGUAGES

English
Hindi

PROGRAMMING

Python (>2.7):
TensorFlow, Pytorch
Theano, Flask
Javascript, Java
MATLAB/R

INTERESTS

approximate inference, Bayesian deep learning. implicit models

EDUCATION

2015–2016	**Master of Philosophy**	University of Cambridge, Cambridge

Machine Learning, Speech, and Language Technologies

- This thesis studied model uncertainty for adversarial images in Bayesian Neural Networks using Dropouts.
- Supervised by Zoubin Ghahramani and Yarin Gal.

2010–2015	**Master of Technology**	Indian Institute of Technology Delhi, Delhi

Mathematics and Computing

- The thesis investigated Extended Kalman Filters for Simultaneoous Localisation and Mapping for robot navigation.

EXPERIENCE

since 2016	**IBM Research**	Dublin, Ireland

Research Scientist

- Solving problems in the fields of machine learning with applications in image generation, image recognition, and AI security.

INTERNSHIPS

Summer '16	**IBM Research**	Dublin, Ireland

Research Internship

- Built a platform for large scale training of deep learning models and used it for training semantic visual recognition system.

Summer '14	**Paul Scherrer Institute**	Villigen, Switzerland

Software Engineering Internship

- Developed a logging system for distributed control and data acquisition systems used in the SwissFEL particle acclerator.

Summer '13	**Qualcomm**	Hyderabad, India

Software Engineering Internship

- Optimised middleware for low power consumption during audio playback in android devices.

Summer '12	**Indian Institute of Science**	Bangalore, India

Research Internship

- Studied parallel computing schemes for segmented scan and parallel scan of large-sized arrays.

PUBLICATIONS

pdf   Rawat, A., Wistuba, M., Nicolae, M. (2017). "Harnessing Model Uncertainty for Detecting Adversarial Examples," in *Bayesian Deep Learning Workshop, conf. on Neural Information Processing Systems (NIPS), Long Beach, California*.

pdf   Lonij, V., Rawat, A., Nicolae, M. (2017). "Extending Knkowledge Bases with Images," in *Automated Knowledge Base Creation Workshop, conf. on Neural Information Processing Systems (NIPS), Long Beach, California*.

pdf   Zantedeschi, V., Nicolae, M., Rawat, A. (2017). "Efficient Defenses against Adversarial Attacks," in *10th ACM Workshop on Artificial Intelligence and Security, AISec@CCS, Dallas, Texas.*

pdf   Rawat, A., Sinn, M. (2017). "Practical Adversarial Training with Empirical Distribution," in *Implicit Model Workshop, 34th International Conference on Machine Learning (ICML), Sydney*.

pdf   Sinn, M., Rawat, A. (2017). "Rigorous Analysis of Adversarial Training with Empirical Distributions ," in *Implicit Model Workshop, 34th International Conference on Machine Learning (ICML), Sydney*.

pdf   Chrin, J., Aiba, M., Rawat, A., Wang, Z. (2015). "Accelerator Modelling and Message Logging with ZeroMQ," in *15th Int. Conf. on Accelerator and Large Experimental Physics Control Systems (ICALEPCS), Melbourne*.

PREPRINTS

pdf   Sinn, M., Rawat, A. (2017). "Non-parametric Estimation of Jensen-Shannon Divergence in Generative Adversarial Training," *arxiv:1705.09199*

PATENTS

link   "A Multi-Modal Infotainment Device for Interactive Braille Learning," in *India Patent Application number: 1729/DEL/2014 e-filed, Status: Uploaded by Patent Office*.

RESEARCH ACTIVITIES

TALKS

- Generative Modelling with Empirical Distributions,
  Oct' 17 *Université Jean Monne, Saint-Etienne, France*
- Training GANs with Empirical Distributions,
  Sep' 17 *Deep Learning Meetup, Dublin, Ireland*
- Fooling Machine Learning Models,
  Oct' 16 *Graduate Conference, Fitzwilliam College, Cambridge*

MISCELLANEOUS

- *Reviewer*, Transportation Research Board, 2018 Annual Meeting
- *Academic Officer*, MCR Fitzwilliam College, 2016
- *Teaching Assistant*, Perception-Guided Technology Design, 2015
- *Teaching Assistant*, Calculus Part 1, 2015
- *Mentor*, Avanti Fellows, 2013 - 2015