Amartya **Sanyal**

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Education

D.Phil in Computer Science (Advisor : Dr. Varun Kanade and Dr. Phil Torr) *2017 - 2021*
University of Oxford, St. Hugh's College

B.Tech. in Computer Science and Engineering (Minor in Linguistics Theory) with Distinction *CPI - 9.4/10.0*
Indian Institute of Technology, Kanpur *2013 - 2017*

Research Experience

Facebook AI Research *London, UK*
Part Time Researcher *October 2020 - Current*

Facebook AI Research, Dr. Edward Grefenstette *London, UK*
Research Intern, Generalization in Reainforcement Learning *June 2020 - September 2020*

Laboratory for Computational and Statistical Learning, Prof. Lorenzo Rosasco *Genoa, Italy*
Visiting Researcher, Implicit Regularization of Gradient Descent *June 2019 - July 2019*

Twitter Cortex, Nicolas Koumchatzky *New York, NY, USA*
Research Intern, Adversarial Generation of Discrete Sequences *May, 2017 - August 2017*

Montreal Institute of Learning Algorithms, Prof. Yoshua Bengio *Montreal, QC, Canada*
Research Intern , Language Modelling with Adaptive Segmentation *May, 2016 - July, 2016*

Amazon.com - Guided by Dr. Atool Saroop and Dr. Rajeev Rastogi *Bengaluru, India*
Machine Learning Intern, Competitive pricing with the Machine Learning Seller Service Team *May, 2015 - July, 2015*

Teaching Responsibilities

'19', '20 **Tutor in Theory of Optimization (60 students)**, Department of Engineering Science *University of Oxford*
'18, '19, '20 **Tutor in Machine Learning**, Wadham College, Worcester College, Dept. of Computer Science *University of Oxford*
'17 **Teaching Assistant in Computational Complexity**, Department Computer Science *University of Oxford*
'14 **Academic Mentor**, Linear Algebra, Real Analysis and ODEs *IIT Kanpur*

Academic Reviewing

'19, '20 **Reviewer for SODA 2020, NeurIPS 2019, 2020, ICML 2020, ICLR 2020, AISTATS 2020**,
'20 **Reviewer for IJCV, CVPR 2020, ECCV 2020**,

Invited (Past and Upcoming) Talks

Jul '20 **Dept. of Computer Science, Indian Institute of Technology, Kanpur, India**,
Aug '20 **Dept. of Computer Science, Indian Institute of Technology, Hyderabad, India**,
Oct '20 **Inria Grenoble - Rhône-Alpes research centre, France**,
Nov '20 **Math Machine Learning Seminar, MPI MIS + UCLA, Germany**,
Nov '20 **Max-Planck-Institut für Informatik, Saarbrücken, Germany**,

Awards & Visits

'19,'20 **NeurIPS'19, ICML'20 Top Reviewer Award**, One of the Top 400 reviewers
'17-'20 **Turing Doctoral Studentship Award**, The Alan Turing Institute, London, UK
'14 & '16 **Academic Excellence Award**, IIT Kanpur
'13 **KVPY(Kishore Vaigyanik Pratyashona Yojana)** , awarded to 280 students by the Gov. of India

Program Committees

'19,'20 **Vice-President**, St. Hugh's College MCR *University of Oxford*
'18,'19 **Wining and Dining Officer**, St. Hugh's College MCR *University of Oxford*
'15 **Editor**, Vox Populi, Campus Newsletter of IIT Kanpur *IIT Kanpur*
'11 **President**, Social Welfare Group, St. Xaviers School, Raiganj

Publications

Stable Rank Normalization for Improved Generalization in Neural Networks and GANs
Amartya Sanyal, Philip H.S. Torr, Puneet K. Dokania
International Conference on Learning Representations (ICLR), Spotlight Paper, 2020

How Benign is Benign Overfitting ?
Amartya Sanyal, Varun Kanade, Philip H.S. Torr, Puneet K. Dokania
In Submission, 2020

Progressive Skeletonization: Trimming more fat from a network at initialization
Pau Jorge, Amartya Sanyal, Harkirat S. Behl, Philip H. S. Torr, Gregory Rogez, Puneet K. Dokania
In Submission, 2020

The Intriguing Effects of Focal Loss on the Calibration of Deep Neural Networks
Jishnu Mukhoti, Viveka Kulharia, Amartya Sanyal, Stuart Golodetz, Philip H. S. Torr, Puneet K. Dokania
Advances in Neural Information Processing Systems (NeurIPS), 2020

TAPAS: Tricks to Accelerate (encrypted) Prediction As a Service
Amartya Sanyal, Matt Kusner, Adria Gascon, Varun Kanade
International Conference on Machine Learning (ICML), 2018

Robustness via Low Rank Representations
Amartya Sanyal, Varun Kanade, Philip H.S. Torr, Puneet Dokania
In Submission, 2020

Optimizing non-decomposable measures with deep networks
Amartya Sanyal, Pawan Kumar, Purushottam Kar, Sanjay Chawla, Fabrizio Sebastiani
Springer,Machine Learning (2018). 2018

Agent based simulation of the evolution of society as an alternate maximzation problem
A. Sanyal, S. Garg, A. Unmesh, H. Karnick
2017 International Conference on Behavioral, Economic, Socio-cultural Computing (BESC), 2017

A Hybrid Deep Architecture for Face Recognition in Real-Life Scenario
Amartya Sanyal, Ujjwal Bhattacharya, Swapan K. Parui
Lecture Notes in Computer Science (Vol. 10481), 2016

Workshop Papers

Interpolating Label Noise Hurts Adversarial Robustness
Amartya Sanyal, Varun Kanade, Philip H.S. Torr, Puneet K. Dokania
NeurIPS Workshop on Workshop on Dataset Curation and Security,
A part of "How Benign is Benign Overfitting?", 2020

Choice of Representation Matters for Adversarial Robustness
Amartya Sanyal, Varun Kanade, Philip H.S. Torr, Puneet K. Dokania
NeurIPS Workshop on Interpretable Inductive Biases and Physically Structured Learning,
A part of "How Benign is Benign Overfitting?", 2020

On using Focal Loss for Neural Network Calibration
Jishnu Mukhoti, Viveka Kulharia, Amartya Sanyal, Stuart Golodetz, Philip H. S. Torr, Puneet K. Dokania
ICML Workshop on "Uncertainty and Robustness in Deep Learning" (Spotlight Paper),
A part of "The Intriguing Effects of Focal Loss on the Calibration of Deep Neural Networks", 2020

Stable Rank Normalization for Improved Generalization in Neural Networks
Amartya Sanyal, Philip H.S. Torr, Puneet K. Dokania
ICML Workshop on Understanding and Improving Generalization in Deep Learning,
A part of "Stable Rank Normalization for Improved Generalization in Neural Networks and GANs", 2019

Encrypted Prediction As a Service
Amartya Sanyal, Matt Kusner, Adria Gascon, Varun Kanade
ICML Workshop on "Encrypted Prediction as a Service",
A part of "TAPAS: Tricks to Accelerate (encrypted) Prediction As a Service", 2018

Intriguing Properties of Learned Representations
Amartya Sanyal, Varun Kanade, Philip H.S. Torr
ICML Workshop on "Theoretical Foundations and Applications of Deep Generative Models",
A part of "Robustness via Low Rank Representations", 2018

Multiscale sequence modeling with a learned dictionary
Bart Merriënboer, Amartya Sanyal, Hugo Larochelle, Yoshua Bengio
Workshop on Machine Learning in Speech and Language Processing, ICML, 2017