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EDUCATION

University of Washington, Seattle

2019 - present

PhD student in Computer Science and Engineering

Advisors: Prof. Ali Farhadi & Prof. Sham Kakade

Indian Institute of Technology Bombay

2013 - 2017

B.Tech (Honours) in Computer Science and Engineering with Minor in Electrical Engineering

Advisor: Prof. Soumen Chakrabarti

WORK EXPERIENCE

NVIDIA Toronto AI Lab

June - September, 2020

Research Scientist Intern

Advisors: Prof. Sanja Fidler & Prof. Antonio Torralba

Microsoft Research India

2017 - 2019

Research Fellow in Machine Learning and Optimization Group

Advisors: Dr. Manik Varma & Dr. Prateek Jain

PUBLICATIONS

Preprints

* - equal contribution

1. **In the Wild: From ML Models to Pragmatic ML Systems.**

Matthew Wallingford, **Aditya Kusupati***, Keivan Alizadeh-Vahid*, Aaron Walsman, Aniruddha Kembhavi and Ali Farhadi.

arXiv:2007.02519 (under review), 2020.

Conference Publications

5. **RNNPool: Efficient Non-linear Pooling for RAM Constrained Inference.**

Oindrila Saha, **Aditya Kusupati**, Harsha Vardhan Simhadri, Manik Varma and Prateek Jain.

Neural Information Processing Systems (NeurIPS), 2020

WiCV workshop @ CVPR, 2020.

4. **Soft Threshold Weight Reparameterization for Learnable Sparsity.**

Aditya Kusupati, Vivek Ramanujan*, Raghav Somani*, Mitchell Wortsman*, Prateek Jain, Sham Kakade and Ali Farhadi.

International Conference on Machine Learning (ICML), 2020 (Virtual Talk).

3. **Extreme Regression for Dynamic Search Advertising.**

Yashoteja Prabhu, **Aditya Kusupati**, Nilesch Gupta and Manik Varma.

International Conference on Web Search and Data Mining (WSDM), 2020 (Long Oral).

Workshop on eXtreme Classification: Theory and Applications @ ICML, 2020.

2. **One Size Does Not Fit All: Multi-Scale, Cascaded RNNs for Radar Classification.**

Dhrubojyoti Roy*, Sangeeta Srivatsava*, **Aditya Kusupati**, Pranshu Jain, Manik Varma and Anish Arora.

International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys), 2019.

🏆 **Best Paper Runner-Up Award.**

Invited Paper in ACM Transactions on Sensor Networks (TOSN) - under review.

1. **FastGRNN: A Fast, Accurate, Stable and Tiny Kilobyte Sized Gated Recurrent Neural Network.**

Aditya Kusupati, Manish Singh, Kush Bhatia, Ashish Kumar, Prateek Jain and Manik Varma.

Neural Information Processing Systems (NeurIPS), 2018.

Technical Reports

1. **Adapting Unstructured Sparsity Techniques for Structured Sparsity.**

Aditya Kusupati.

Technical Report, Paul G. Allen School of Computer Science and Engineering, University of Washington, 2020.

Demos

1. **Lightweight, Deep RNNs for Radar Classification.**

Dhrubojyoti Roy*, Sangeeta Srivatsava*, Pranshu Jain, **Aditya Kusupati**, Manik Varma and Anish Arora.
International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys), 2019.

Theses

1. **Efficient Spatial Representation for Entity-Typing.**

Anand Dhoot*, **Aditya Kusupati*** and Soumen Chakrabarti.
Undergraduate Thesis, Computer Science and Engineering, IIT Bombay, 2016 - 17.

SOFTWARE

1. **EdgeML: Machine Learning for resource-constrained edge devices.**

Don Kurian Dennis, Yash Gaurkar, Sridhar Gopinath, Sachin Goyal, Chirag Gupta, Moksh Jain, Ashish Kumar, **Aditya Kusupati**, Chris Lovett, Shishir Girish Patil, Oindrila Saha and Harsha Vardhan Simhadri.
Microsoft Research India, 2017 - present.

Stats as of August 2020: ★ 884, 📄 242, 👁 >175,000, 📦 >2,700.

SELECTED AWARDS AND HONORS

- University of Washington graduate and CSE student conference grants to attend **WSDM '20** 2020
- **Best Paper Runner-Up Award at BuildSys '19** 2019
- **Best reviewer** (top 400) award for **NeurIPS '19** 2019
- Young Researcher at Heidelberg Laureate Forum (**HLF '19**) with Romberg Grant & MSR Travel Grant 2019
- **Facebook AI Research International Scholarship** for DPhil at VGG, Oxford (2019 - 22, declined) 2019
- IIT Bombay CSE **Teaching Assistant of the month** (Feb '16 and Feb '17) award 2016 - 2017
- **All India Rank 44** in JEE Advanced (IIT-JEE) 2013 among 150,000 candidates 2013
- Gold Medal and rank **6 out of top 40** in India at OCSC for International Chemistry Olympiad '13 2013
- Awarded KVPY Fellowship from Government of India - All India Rank 22. 2011
- Awarded NTSE Scholarship from Government of India. 2008

TALKS

- **Soft Threshold Weight Reparameterization for Learnable Sparsity**
 - International Conference on Machine Learning (ICML) July 2020
 - NVIDIA Research July 2020
 - Deep Learning: Classics and Trends June 2020
- **The Edge of Machine Learning**
 - University of Washington CSE Colloquium & Sensor Systems Seminar October 2019
 - VGG @ Oxford University, UK April 2019
 - Microsoft Research Redmond March 2019
 - Microsoft Research India August 2018
- **The Extremes of Machine Learning**
 - Microsoft Bing Bellevue March 2019

PROFESSIONAL RESPONSIBILITIES

- *Reviewing:* IEEE TPAMI, NeurIPS (2019 - present), ICML (2020 - present), ICLR (2021 - present).
- *Mentorship*
 - Students
 - * Manish Singh
Bachelor's Thesis, IIT Delhi (w\ Dr. Manik Varma) → PhD Student @ MIT EECS 2017 - 18
 - * Sheshansh Agrawal
Bachelor's Thesis, IIT Bombay (w\ Prof. Soumen Chakrabarti) → RSDE @ MSR India 2018 - 19

- * Sahil Bhatia
Research Fellow, MSR India (w\ Dr. Prateek Jain) → PhD Student @ UC Berkeley EECS 2018 - 20
- * Oindrila Saha
Research Fellow, MSR India (w\ Dr. Prateek Jain) 2019 -
- * Sachin Goyal
Research Fellow, MSR India (w\ Dr. Prateek Jain) 2019 -
- New In ML 2019 session @ NeurIPS '19 2019
- MSR India Summer Workshop 2018: Machine Learning on Constrained Devices Summer 2018
- *Undergraduate Teaching Assistantship* - Computer Science and Engineering, IIT Bombay
 - Digital Logic Design - *Prof. Supratik Chakraborty* - **TA of the month, Feb '17** Spring 2017
 - Software Systems Lab - *Prof. Sharat Chandran* Autumn 2016
 - Digital Logic Design - *Prof. Supratik Chakraborty* - **TA of the month, Feb '16** Spring 2016
 - Computer Programming and Utilisation - *Prof. Varsha Apte* Autumn 2015
 - Computer Programming and Utilisation - *Prof. Kavi Arya* Spring 2015
- *Faculty Recruiting Liason* - Paul G. Allen School of CSE, University of Washington 2020 - 2021
- *Department General Secretary* - Computer Science and Engineering, IIT Bombay 2016 - 2017