Pradyot Prakash

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EDUCATION

University of Wisconsin-Madison (UW-Madison), *Madison, WI, USA* — *Sep 2017 – Dec 2018*
MS in Computer Science — 4.0/4.0

Indian Institute of Technology Bombay (IIT Bombay), *Mumbai, India* — *Jul 2013 - May 2017*
B.Tech. with Honors in Computer Science and Engineering with Minor in Statistics — 9.26/10

PROFESSIONAL EXPERIENCE

Facebook, *Menlo Park, CA, USA* — *Feb 2019 - Current*
Software Engineer, Speech

- Working in the Automated Speech Recognition team to improve voice-to-text efforts for our voice assistant and video captioning
- My focus is on using Neural Language Models for second phase rescoring and better Pronunciation Modeling for entities

University of Wisconsin-Madison, *Madison, WI, USA* — *Sep 2017 – Dec 2018*
Research Assistant with Prof. Jason Fletcher

- Assisted with application of Machine Leaning to different social science datasets for making policy decisions
- Used algorithms such as random forests, causal forests and neural network-based approaches

Facebook, *Menlo Park, CA, USA* — *Summer 2018*
Software Engineer Intern, Ads Ranking

- Worked on the **prediction models** used within **Ads Product Ranking** to improve the product placement on the feed
- One of the models I worked on **served global ads traffic**

Adobe Research Labs, *Bengaluru, India* — *Summer 2016*
Research Intern

- Built a model for **predicting Brands' Personality** along 5 personality dimensions using articles published by companies
- Outperformed state-of-the-art accuracies by **19%** in the best case and **patent** (retrieve here) approved and filed by Adobe

IST Austria, *Klosterneuburg, Austria* — *Summer 2015*
Research Intern

- Researched Hybrid Systems and hybridizing a single-state to a multi-state system governed by time-based splitting rules
- **Paper published** in HSCC 2016 (retrieve here)

RECENT KEY PROJECTS

Using Codes for Robust Classifiers (retrieve here) — *Fall 2018*
Under Prof. Dimitris Papailiopoulos, UW-Madison

- Used ideas from coding theory to attempt to design robust classifiers resilient to adversarial attacks

Breaking Robust Adversarial Classification (retrieve here) — *Spring 2018*
Under Prof. Dimitris Papailiopoulos, UW-Madison

- Robust Manifold Defense is state-of-the-art adversarial classification algorithm which works by projecting on the space of GANs
- Developed the **first algorithm** to break the classifier & **brought down the classification accuracy by 35%** (more work in progress)

Fuzzy Iterative Machine Teaching (retrieve here) — *Spring 2018*
Under Prof. Jerry Zhu, UW-Madison

- Studied the inverse problem of ML--Machine Teaching--where the aim is to **learn** a target parameter vector in minimum steps
- **Derived robust bounds** for the minimum steps needed to converge under **noisy and missing data** settings for different losses

Autoencoders & Generative Adversarial Modeling — *Spring 2018*
Under Prof. Rebecca Willett, UW-Madison

- **Implemented** autoencoders and generative adversarial nets for MRI image denoising
- Worked on a unique approach to **invert a neural network** using Neumann series in operator space

GPU profiling of Deep learning frameworks (retrieve here) — *Fall 2017*
Under Prof. Aditya Akella, UW-Madison

- Analyzed deep learning libraries using their intermediate representations (with ONNX) and profiled their GPU performances

Effect of Segmentation and Encoding on Machine Translation — *2016 - 2017*
Under Prof. Pushpak Bhattacharyya, IIT Bombay

- **Improved transliteration and translation** with use of pivot-based modeling, byte-pair encoding and orthographic syllabification
- **Paper published** at IJCNLP 2017 (retrieve here)

Statistical Shape Analysis of Images (retrieve here and here) — *2016 - 2017*
Under Prof. Suyash Awate, IIT Bombay

- **Created a similarity measure** between images and their contours alongside a novel objective function
- Used that to **segment MRI images** (with a shape prior) by performing Riemannian PCA on high dimensional unit spheres

OTHER ACHIEVEMENTS

- **Department Academic Mentorship Program Head** for CS and **Institute Academic Mentor**, IIT Bombay (2016 - 2017)
- **Lead** the **Web and Coding Club** of IIT Bombay (2015 - 2016)
- Secured **All India Rank 55** in JEE Advanced out of 150000 and **All India Rank 16** in JEE Main out of 1.5 million students (2013)
- Won several awards in Hackathons (one organized by Microsoft) and Logic Championships organized at IIT Bombay (2014 - 2016)
- Recipient of the Young Scientist Incentive Programme (KVPY) National Fellowship (2012)