

Pratik Dubal

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EDUCATION

- **Columbia University in the City of New York** New York, NY
Masters in Computer Science - Machine Learning Track (GPA: 3.7/4.0) Expected May 2020
 - Graduate Teaching Assistant - Applied Deep Learning by Prof. Joshua Gordon.
 - Research Advisors - Prof. John Kender, Prof. Hod Lipson and Prof. Peter Belhumeur.
- **K. J. Somaiya College of Engineering - University of Mumbai** Mumbai, India
Bachelor of Engineering in Information Technology (GPA: 8.27/10.0) May 2017
 - Awarded the 'Best Student Award - 2017'.

EXPERIENCE

- **AitoeLabs - aiSight Video Analytics Pvt. Ltd.** Mumbai, India
Machine Learning Analytics Lead June 2017 - Dec 2018
 - Led the transition of the C++ based video analytics engine from traditional computer vision algorithms to Deep Neural Networks. Integrated Object Detection, Fine-Grained Attribute Classification and Video Summarization.
 - Increased Face Detection accuracy by 34%, while decreasing inference time by 59%. Improved Face Recognition accuracy by 29%.
 - Improved Submodular Optimization based Video Summarization, Multi-Object Tracking and Data Subset Selection.
- **Barclays Technology Centre India** Pune, India
Intern Analyst Jun 2016 - July 2016
 - Worked on aggregating the bank's legal documents from various mediums into a single unified application.
 - Deployed SQL Server Integration Packages and automated Business Object report generation.

TECHNICAL SKILLS

- **Programming Languages:** C, C++ and Python.
- **Machine Learning and Computer Vision:** TensorFlow 2.0, PyTorch, Sci-kit Learn and OpenCV.

RESEARCH PROJECTS

- **Speech-to-Speech Prediction:** Worked on an end-to-end speech based response and emotion prediction task which predicted the output for a given speech utterance. Advised by Prof. Hod Lipson. (*Summer 2019*)
- **Identifying Topics from Short Descriptions:** Developing an unsupervised topic model to identify topics from short text descriptions of Conservation Grants. Joint project with the Ecology Department at Columbia. (*May 2019-Present*)
- **Assessing Speaker and Teaching Effectiveness:** Worked on assessing teaching effectiveness of a speaker using speaker audio and audience eye fixations. Coupled deep audio embeddings with audience eye fixations to identify learning patterns in subjects. Advised by Prof. John R. Kender. (*Spring 2019*)
- **Vis-DSS: Visual Data Selection and Summarization:** Released an open-source toolkit for Visual Summarization, Data Subset Selection and Diversified Active Learning using Submodular functions. (*Aug 2018-Nov 2018*)
- **Skin Cancer Detection and Classification:** Developed an application that detects and classifies skin lesions as malignant and benign, and further into three of their respective sub-categories, with the use of various image processing and machine learning techniques. (*June 2016-May 2017*)

PUBLICATIONS

- **Demystifying Multi-Faceted Video Summarization: Trade-off Between Diversity, Representation, Coverage and Importance:** 2019 IEEE Winter Conference on Applications of Computer Vision (WACV).
- **Vis-DSS: An Open-Source toolkit for Visual Data Selection and Summarization:** arXiv:1809.08846
- **Deployment of Custom Deep Learning based Video Analytics on Surveillance Cameras:** arXiv:1805.10604
- **Skin Cancer Detection and Classification:** 2017 IEEE Inter. Conf. on Electrical Engg. and Informatics (ICEEI).
- **Rezence - Wireless Charging Standard based on Magnetic Resonance:** DOI 10.17148/IJARCE.2015.41245