

# Anup Anand Deshmukh

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EDUCATION	<b>International Institute of Information Technology, Bangalore.</b> <span>May 2019</span> <div><div>Degree</div><div>CGPA</div><div>Coursework</div></div> <div><div>Integrated Masters in Information Technology</div><div>3.27/4 (At the end of eighth semester)</div><div>Reinforcement Learning, Advanced Machine Perception, Machine Learning, Automata Theory and Computability, Big Data Algorithms, Advanced Cryptography, Linear Algebra, Signal Processing, Data Structures - Algorithms</div></div>
INTERESTS	Recommender Systems, Deep learning in Computer Vision
RESEARCH EXPERIENCE	<b>A Serendipitous Clustering Algorithm For Improving User Satisfaction in Recommender Systems</b> <span>Jan 2018-April 2018</span> <i>Under review as a conference paper at SAREC 2018</i> <span>Guide: <a href="#">Prof. Shrisha Rao</a></span> <ul style="list-style-type: none"><li>Designed an approach that efficiently tackles the problem of high sparsity and overspecialization in collaborative filtering.</li><li>Effectuated serendipity in movie recommender systems with an end-to-end algorithm, Serendipitous Clustering for Collaborative Filtering (SC-CF) that considers diversity, unexpectedness and relevance.</li></ul> <b>Fast and Provable Concept Decompositions in Large Text Corpus</b> <span>Sept 2017-April 2018</span> <i>Under review as a conference paper at ACML 2018</i> <span>Guide: <a href="#">Dr. R. Pratap</a></span> <ul style="list-style-type: none"><li>Experimentally validated the SPKM++ algorithm by considering the spherical clustering problem for large sparse document collections.</li><li>Proved that using Markov Chain Monte Carlo (MCMC) seeding technique, the computational complexity in SPKM++ can be decreased while retaining the clustering results.</li></ul> <b>Scaling up Simhash</b> <span>Jan 2018-April 2018</span> <i>Under review as a conference paper at CIKM 2018</i> <span>Guide: <a href="#">Dr. R. Pratap</a></span> <ul style="list-style-type: none"><li>Proposed a sketching algorithm - simsketch - that can be applied on top of simhash which further reduces the dimension of the data while maintaining an estimate of the cosine similarity between original real valued vectors.</li></ul>
WORK EXPERIENCE	<b>Audio-video analysis and perception for detecting subtle changes</b> <span>Ongoing</span> <i>Intern at FAST lab-CentraleSupélec, Rennes-France</i> <span>Guide: <a href="#">Prof. Renaud Seghier</a></span> <ul style="list-style-type: none"><li>Working on Audio-Video modalities for finding the subtle changes in human face to model stress in real time.</li></ul> <b>CNN based Spatio-Temporal Features of Crowd Models</b> <span>May 2017-July 2017</span> <i>Intern at Murdoch University, Perth-Australia</i> <span>Guide: <a href="#">Prof. Ferdous Sohel</a></span> <ul style="list-style-type: none"><li>Worked on a problem of crowd counting which used conditional GAN proposed by Philip Isola, UC Berkley and was extended to crowd dataset like SHOCK and WIDER FACE.</li><li>Qualitatively analyzed the CNN based models which effectively learn spatial features together with appearance features for video analysis.</li></ul> <b>SlicePAY (formerly Buddy), Bangalore, India</b> <span>May 2016-July 2016</span> <i>Full Stack Developer</i> <ul style="list-style-type: none"><li>Led the task of bringing flexibility in payment through India's top 10 merchant websites.</li><li>Built the browser extension using JavaScript which gave access to the SlicePAY's payment plans right from user's merchant website. Link: <a href="#">SlicePAY's chrome extension</a></li></ul>
COURSE PROJECTS	<b>Merge LSTM model for Image Description Generation</b> <span>August 2017-April 2018</span> <i>Research Elective, IIITB-India</i> <span>Guide: <a href="#">Prof. Dinesh Babu</a></span> <ul style="list-style-type: none"><li>Analyzed and built the retrieval based model using Keras and Tensorflow on the construction which uses both LSTM's for language modelling and CNN's for generating image representation.</li></ul> <b>Automated Essay Scoring with Cross Feature Vector Generation</b> <span>August 2017-Dec 2017</span> <i>Course: Machine Learning I</i> <span>Guide: <a href="#">Prof. G Srinivasa R.</a></span> <ul style="list-style-type: none"><li>Designed and implemented the Intelligent Text Rater(ITR) with the proposed novel approach of feature vector generation of text essays which significantly reduces the required training data size.</li></ul>

## Automatic Verification of Program Correctness

Jan 2017-May 2017

Course: *Programming Languages*

Guide: *Prof. Manish Gupta*

- Studied the Ullman's algorithm and Backtracking procedures used in converting one program dependence graph (PDG) to another in order to find the distances in submitted codes through Sketch tool.

### SKILLS

*Languages*

Python(Keras, Tensorflow), C++, Prolog, JScript

*Tools*

Matlab, Arduino(IDE), Latex

### ACADEMIC

### ACHIEVEMENTS

- 2016 Winner of the Hackathon held in IIIT-B as part of the Signal Processing course.
- 2016 Designed and created an Intellectual Property Management Portal for IIIT-B which secured place in top 3 from 17 teams.
- 2014 Top 1% in Maharashtra State's Higher Secondary School Certificate (HSC) exam.
- 2012 Secured All India Rank 940 in International English Olympiad.
- 2011 Secured All India Rank 2380 in 10<sup>th</sup> National Cyber Olympiad.

### LEADERSHIP

- 2018 **Teaching Assistant**, TA for the course Theory of Automata and Computations at IIITB
- 2017 **Curator**, TEDx IIITB
- 2015 **Editorial Board**, IIITB's '8 bit' magazine
- 2014 **Co-Founder**, IIITB 'Comic Club'
- 2014 **Social Media Team**, Microsoft TechEd 2014