# Anup Patel

## Personal Data

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| Place and Date of Birth: | Uttar Pradesh, India \| 28 Mar 1995 |
| Address: | Varanasi, Uttar Pradesh, India |
| Language: | Hindi & English |
| Interest: | Machine Learning, Cricket |
| Website: | anup-patel.github.io |
| LinkedIn: | linkedin.com/in/anup2328 |
| Github: | github.com/anup-patel |

## Work Experience

Aug 2020-Present
**Specialist, Product Development**
**Mastercard AI Garage**

- Part of Cyber and Intelligence Solutions (CAI) division at Mastercard.
- Working on developing solutions of some real life Machine learning problem for Mastercard.
- Focus on building state of the art ML techniques like **Deep Models, Gradient Boosting methods, Text Data Processing, Transaction Data Embedding** to get efficient results on very big datasets.

May 2019-July 2019
**Data Science Intern**
**Airtel X-Labs**

- Part of Airtel X Labs team led by Shantanu Bhattacharya.
- Worked mainly on Classical ML algorithms and statistics to Solve crucial problems like Prime Acquisitions and ARPU upgrade

## Education

2018-2020 Master of Technology in Computer Science
**Indian Institute of Science**, Bangalore
Advisor: Prof. Gopinath K.
GPA:7.3/10

2013-2017 Bachelor of Engineering in Computer Science and Engg.
**Vivekananda Global University**, Jaipur
Gpa: 9.73/10

2010-2012 Higher Secondary at **Tulsi Vidya Niketan**, Varanasi
Percentage: 78.4/100

2010 Secondary at **Varanasi Public School**, Varanasi
GPA: 9.6/10

## Accomplishments

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| GATE 2018 | Secured All India Rank 142 in Computer Science |
| ISRO SC Written Test Dec 2017 | Secured All India Rank 2 |
| Gold Medalist 2013-2017 | Gold Medalist in B.tech (2013-2017) |
| Robotics Training 2015 | Completed Live Project based Training |

## Projects

### Using Program Counters to Predict Execution Time of Programs through Machine learning

August 2019 - June 2020 | *Computer Science & Automation, IISc*

MTech Project | Advisor: Prof. Gopinath K.

Modern workloads are a heterogeneous mix of parallel applications running on systems with complex architecture and they interfere with each other because of limited resources. These interference's lead to the degradation of system performance. Apart from interference, there may be many other factors that lead to poor system performance. To know about the root cause behind factors affecting system performance, one needs to analyse all hardware counters and should have good domain knowledge. But with the help of machine learning techniques, we can automatically analyse all the counters and find the root cause of the problem.

### Community Detection in an Information Network

Sep 2018 | *Computer Science & Automation, IISc*

Course: Data Analytics | Advisor: Prof. Rajesh Sunderasan

Made use of the two different methids - Fiedler-vector and Louvain, to identify the two communities in a bottlenose-dolphins network. The dolphin network has a total of 62 nodes(i.e. dolphins) and 159 edges between them. While the Fiedler-vector method focuses on finding the second smallest eigen value of the graph Laplacian matrix and then cluster using K-Means technique, the Louvain uses Modularity Maximization approach to obtain the communities present in the network.

**URL**: github.com/anup-patel/CommunityDetector

### Prime Acquisition

July 2019 | *Airtel X-Labs*

Advisor: Mr. Alok Mathur (Senior Data Scientist Airtel X Labs)

Many offers were provided by Airtel to users, one of them is Amazon Prime Membership. Problem statement was to predict whether a user will claim Prime membership in future or not. Our algorithm was able to achieve more than 85% accuracy.

### ARPU Upgrade

May 2019-June 2019 | *Airtel X-Labs*

Advisor: Mr. Alok Mathur (Senior Data Scientist Airtel X Labs)

Problem statement was to Predict whether a user ARPU will increase or not in future based on its previous month usage. Result can be further used to analyse whether a user is happy with Airtel services or not. Our model was able to achieve RMSE of 10.

### Adversarially Regularized Graph Auto-Encoder for Graph Embedding

Feb 2019 - Apr 2019 | *Computer Science & Automation, IISc*

Course: Machine Learning | Advisor: Prof. Ambedkar Dukkipati

Graph Embedding is an effective method to represent graph data in a low dimensional space for graph analytics. This Framework encodes the topological structure and node content in a graph to a compact representation, on which decoder is trained to reconstruct the graph structure. Furthermore, the latent representation is enforced to match a prior distribution via an adversarial training scheme

### Unsupervised Learning Task of Clustering

Oct 2017 - Nov 2017 | *Computer Science & Automation, IISc*

Course: Linear Algebra | Advisor: Prof. M.N.Murthy

Designed and implemented unsupervised learning task of clustering similar data points using k-means and spectral clustering algorithms. This project deals with eigenvalues, eigenvectors and one of their numerous applications, namely clustering. K-means and Spectral Clustering have been applied on two different datasets and observed the differences. This was done as a part of assignment.

### Prediction of Mars' Orbital Plane

Sep 2019 | *Computer Science & Automation, IISc*

Course: Data Analytics | Advisor: Prof. Rajesh Sunderasan

Use mars opposition data (data collected by Tyco Brahe and used by Kepler) to find the projection of Mars position on the ecliptic plane and the distance of this projection to the centre. Find the best fit circle of mars orbit (assuming it lies in ecliptic plane) using the triangulation dataset.

Second part of it was to, using opposition and the geocentric latitudes of Mars, find the corresponding heliocentric latitudes of Mars. This is done as a course assignment in Data Analytics.

**URL**: github.com/anup-patel/Mars-Orbit-Predictor

## Certifications

Nov 2020 **Sequence Models**
Coursera | See Certificate

Oct 2020 **Sequences, Time Series and Prediction**
Coursera | See Certificate

May 2020 **Convolutional Neural Networks**
Coursera | See Certificate

## Computer Skills

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| Data Science Related: | Python,tensorflow, keras, PySpark, Analytics Zoo, Pytorch |
| Programming Language: | python, C/C++ |
| Others: | SQL, Impala, LaTeX, Wordpress |

## Courses

Machine Learning, Practical Data Science, Data Analytics, Deep Learning, Computational Methods of Optimization, Linear Algebra and Probability, System Security, Cryptography, Design and Analysis of Algorithm, Distributed Computing System.

## Volunteer Experience

Aug 2019 Placement Coordinator at CSA Department
**Indian Institute of Science**, Bangalore
Worked as a placement coordinator during placement session 2019-2020 and were responsible for all communication between Institute and Companies.

Mar 2019 Event Coordinator at Open Day
**Indian Institute of Science**, Bangalore
Worked as a coordinator for the Open Day event 'Opportunities at CSA', held on 23rd March, 2019. Part of Website design team. Also designed the Logo for Open Day, 2019.

Jul 2019 Volunteer at CSA Summer School
**Indian Institute of Science**, Bangalore
Part of the organising team for one-week long 7th CSA Undergraduate Summer School. I was responsible for interviewing candidates from various institutes and selecting good candidates to attend CSA summer school.

Jul 2019 Website Designer at CSA Summer School
**Indian Institute of Science**, Bangalore
Designed and managed the website for the CASL Lab, IISc. The details of the website can be found here.

Feb 2019 Design Team Lead
Mar 2019 **Open Day, Indian Institute of Science**, Bangalore
Led the Design Team for the Open Day event held on 23rd March, 2019. Responsible for designing the website, event logo and posters, flyers and banners.
Website link : https://events.csa.iisc.ac.in/open-day-2019/