



# ACM Summer School on Data Science

Venue: Faculty Block-F, Department of Commerce and Management, Goa University

Goa University in collaboration with ACM India (<http://india.acm.org>) and Robert Bosch Centre for Data Science and Artificial Intelligence, IIT Madras (<https://rbc-dsai.iitm.ac.in>) is organizing two-week summer school at Goa University from 4<sup>th</sup>- 16<sup>th</sup> June 2018. About 40 participants selected from institutions across India will be attending the summer school. There are limited seats available for participants from Goa.

## Objective

- The primary objective of the summer school is to introduce the basics of Data Science to the participants with the intention that they take up research in this subject in the near future.
- The summer school is also open for pre-final year Undergraduate, Master's and PhD students and few teachers selected locally from colleges within Goa.
- Selected participants are required to pay school fees of INR 2360 (includes GST). Instructions about payment process will be provided to selected candidates at a later date.

## The tentative list of topics to be covered

- Mathematical foundation, basic statistical analysis and data visualization: Matrix Algebra, Probability and random processes, inferential statistics, optimization for data science and data visualization;
- Elements of machine learning: Supervised learning (methods: linear and logistic regression, K-NN, LDA, Tree based methods, SVMs, ANNs. Concepts: Bias-Variance tradeoff, regularization, dimensionality reduction), unsupervised learning (clustering and ARM); (iii) Advanced topics: Reinforcement Learning, Deep Learning, Topics in Big Data and Learning Theory.

## Prerequisites

- Some background in Linear Algebra, Probability & Statistics
- Good programming knowledge in Python/MatLab/R
- Students are expected to bring laptop loaded with Python, MatLab, R

## Course Duration/Plan

- 12 working days (Mon – Sat)
- 3 hours of teaching each day
- 3 hours of tutorial/lab each day

## Course Coordinators

- Nandan Sudarsanam, IIT Madras
- Harish Guruprasad, IIT Madras
- Balaraman Ravindran, IIT Madras

## Speakers/Tutorial Speakers

- Sahely Bhadra - IIT Palakkad
- Sourangshu Bhattacharya, IIT Kharagpur
- Anirban Dasgupta, IIT Gandhinagar
- Piyush Rai, IIT Kanpur
- Mitesh Khapra, IIT Madras
- Raghunathan Rengaswamy, IIT Madras
- Harish Guruprasad, IIT Madras
- Balaraman Ravindran, IIT Madras
- Nandan Sudarsanam, IIT Madras

## Local Coordinator

- Venkatesh Kamat, Goa University

### How to reach Goa University:

- Accommodation for outstation candidates is provided at Goa University Guest House - <https://tinyurl.com/guesthouse2k18>
- Venue of Summer School - Faculty Block-F, Department of Commerce and Management - <https://tinyurl.com/venue2k18>
- By Rail : Karmali railway station to Goa University (18 KM)  
Madgaon railway station to Goa University (34 KM)
- By Air: Goa International Airport to Goa University (23 KM)
- By Bus: Panjim bus station to Goa University (9.5 KM)
- Prepaid taxis / rickshaws / local bus transport is available from all stations.

Sr. No.	From	To	Distance (in approximate kms)	Google Map Route
1	Panaji Bus Stand	Faculty Block - F, Goa University	11	<a href="https://tinyurl.com/route-from-panaji-bus-stand">https://tinyurl.com/route-from-panaji-bus-stand</a>
2	Panaji Bus Stand	Goa University Guest House	10	<a href="https://tinyurl.com/panaji-guesthouse">https://tinyurl.com/panaji-guesthouse</a>
3	Margao Bus Stand	Panaji Bus Stand	31	<a href="https://goo.gl/WakxWZ">https://goo.gl/WakxWZ</a>
4	Airport	Goa University Guest House	23	<a href="https://tinyurl.com/airport-gu">https://tinyurl.com/airport-gu</a>

→ For any assistance regarding transport and accommodation contact :

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