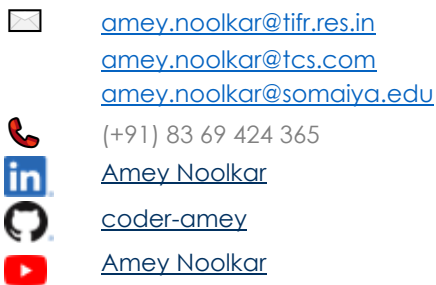


# Amey Noolkar



7,  
Onkar Apartment,  
Dena Vijay Colony,  
Sambhaji Chowk,  
Trimbak Road,  
Nashik,  
Maharashtra,  
India – 422005.



## Research Interests

Neural Networks & Deep Learning  
Natural Language Processing

Cognitive Computing & Image/Speech Recognition  
Applications of NLP on Indian Languages

## Research & Professional Experience

### Tata Institute of Fundamental Research, Mumbai.

#### **Research Fellow – School of Technology & Computer Science**

**Dec 2020 – Present**

Research Associate under the guidance of Prof. Dr. Sandeep Juneja.

- [Oxygen Planner for States in India](#) – a tool for forecasting district-wise weekly oxygen demand by COVID-19 patients and scheduling supply to meet the requirement.
- Monte-Carlo simulation modelling of COVID-19 pandemic: implemented vaccination intervention for an SEIRD model.
- Analysis of COVID-19 patients' data from Mumbai for a WHO-report on impact of easing restrictions.
- Analysed the probability distribution of the hospitalization duration among the COVID-19 fatalities in Karnataka to compare the characteristics of the first and second waves in Bengaluru City.

#### **Teaching Assistant – School of Technology & Computer Science**

**Aug 2021 – Present**

Assistant under Prof. Dr. Himanshu Asnani

- CSS.212.0: Machine Learning in Practice – conducted programming tutorials and designed programming assignments for a post-graduate course on Machine Learning at the STCS, TIFR.

### Tata Consultancy Services, Bengaluru

**Jul 2019 – Nov 2020**

#### **System Engineer - Data Scientist for the Enterprise Analytics Platform of Deutsche Bank**

[On a sabbatical for research]

- Development of an Analytics Framework for retrieving, tracking and reporting the resource-utilization metrics of a Distributed Cluster.
- Business Insights Reporting based on Big-Data Analytics using Java and Spark
- Python-based Process Automation for status-reporting

## Education

### **K. J. Somaiya Institute of Engineering & Information Technology**

Bachelor of Engineering (Computer Engineering)

University of Mumbai.

**Aug 2015 – Jun 2019**

**CGPA: 7.54/10**

### Final-Year [Engineering Project](#):

July 2018 – June 2019

#### Trigger Algorithm Development using a $\mu$ -TCA-based FPGA

Guided by Prof. Nisha Vanjari (KJSIET) & Dr. Raghunandan Shukla (TIFR)

- Proof-of-Concept implementation of Unsupervised Machine Learning using a  $\mu$ -TCA-based Field-Programmable Gate Array (FPGA)
- Project was a part of the high-speed implementation of a classification algorithm used to filter out noise from the data acquired by the sensors of the Large Hadron Collider (LHC) of the European Organization of Nuclear Research (CERN).
- Work involved:
  - [FPGA-based Hardware Programming in VHDL](#)
  - [UART-based FPGA-Computer Communication Interface in C++](#)
  - [Circuit-Level programming of ML algorithms \(K-Means Clustering\)](#)
- Conducted in collaboration with the Department of High-Energy Physics (DHEP), Tata Institute of Fundamental Research (TIFR), Mumbai.

### Undergraduate [Internship](#):

July 2017 – June 2018

#### [Project LHCInfo O2O for CMS, CERN](#)

Guided by Prof. Dr. Shashikant Dugad & Dr. Ravindra Verma at TIFR

- Development of a C++-based framework for retrieving LHC-related sensor readings as well as metrics and persisting them in a special-purpose database designed for virtually reconstructing the collision sequence for analysis.
- Work involved:
  - [Big-Data framework in C++ for virtual reconstruction of LHC events](#)
  - [Python-based pipelines composed of C++-based Database Handling services for the retrieval and storage of scientific data](#)
  - [Scheduling and management of pipelines on CERN servers to record LHC-data for reconstruction](#)
- Conducted in collaboration with **AlCaDB** team of the **CMS Experiment** of **CERN** at the Department of High-Energy Physics (DHEP), Tata Institute of Fundamental Research (TIFR), Mumbai.

## Courses & Workshops

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- [NLP Specialization](#), 2020 (4-Course Specialization, deeplearning.ai, Coursera)
- [Deep Learning Specialization](#), 2019 (5-Course Specialization, deeplearning.ai, Coursera)
- [Machine Learning](#), 2017 (Online Course, Stanford University, Coursera)
- Ground-Station Workshop, 2017 (Pratham, IIT Bombay)
- Introduction to Cryptology, 2016 (Online Course, IIT Roorkee, NPTEL)

## Skills & Proficiency

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- Programming Experience:
  - *Python, C++, Java*: Curricular and project-related purposes, competitive programming, in-depth experience, teaching experience.
  - *TensorFlow*: Course-related purposes, moderate experience, teaching experience.
  - *Octave, MATLAB*: Curricular purposes, moderate experience.
  - *Root, shell*: Project requisites and related purposes, detailed experience.
  - *VHDL*: Project requisite, in-depth experience.
  - *HTML, CSS & JavaScript*: project-related purposes, detailed experience.
- Natural Languages: Marathi, Hindi, English & basic Sanskrit.
- Proficient programming and systematic debugging capabilities with a quick grasp over new functionalities and languages.
- Collaborative experience in a diverse range of teams, advisory committees and panels.

## Activities & Achievements

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- **Winner** of the “**Touch The Jovian Moon**” **Mission-Design competition** at the **Liquid Propulsion Systems Centre, ISRO**. (May, 2018)
- Participant at the **ACM-ICPC 2018 Regional Round** at the Amrita School of Engineering, Coimbatore. (December, 2017)
- **Student of The Year** (Higher Education)  
– Somaiya Vidyavihar group of institutions, September 2018.
- **Outstanding Boy Student** (Higher & Technical Education)  
– Somaiya Vidyavihar group of institutions, September 2018.
- **Master Nirmala** (Outstanding Boy Student)  
– Nirmala Convent High School, January 2013.
- **Founder, Infinite Loop** – The Programming club of KJSIET. (Founded: January, 2017)
- **Founder, Vyom** – The Astronomy Club of KJSIET. (Founded: January, 2017)
- **Mentor, New Leap Initiative** – The Satellite Club of KJSIET. (July 2017 – June 2019)
- Member of the **Table Tennis** team of the KJSIET (inter-collegiate level).

## Extra-curricular Association

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- **IUMS Students’ Module**, Govt. of Maharashtra (A committee for digital reformation of Higher Education, Panellist; June, 2018 – June, 2019)
- **Khagol Mandal** (Astronomy Club, Member; 2014 – Present)

## Publications & Contributions

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- Juneja S., Saptharishi R., Srivastava P., Mittal D., Noolkar A., Eeshan A., (2021), **[Oxygen Planner for States in India](#)**. A tool for forecasting district-wise weekly oxygen demand by COVID-19 patients and scheduling supply to meet the requirement.
- Noolkar A., (2021), **[Finding e](#)**. A python-based runnable article about a fundamental constant of mathematics. The article was submitted as an entry to the Summer of Math Exposition-1 (**[SoME1](#)**).
- Noolkar A., Patel G., (2020), **[COVID-19 Tracker](#)**. Github-based project for tracking and visualizing the spread of COVID-19 pandemic **[globally](#)** and within **[India](#)**.
- Verma R., Noolkar A., (2018), *Added the CTPPS & ECAL attributes to CondFormats/LHCInfo*. Contributed to the CMS Software through the pull requests **[#22527](#)** and **[#22668](#)**.
- Noolkar A., Bhanushali H., (2018), **[Entry, Descent & Landing Sequence and Propulsion Systems for Soft Landing on Europa](#)**. Presented at the “Touch The Jovian Moon” Mission-Design Competition of the Liquid Propulsion Systems Centre, Indian Space Research Organization.
- Articles on Astronomy written in **[Marathi](#)** in the *Khagol Vishwa* (Khagol Mandal’s e-magazine):
  - का झेपावे अंतराळात? (२०१९). *खगोल विश्व जागतिक अंतराळ सप्ताह विशेषांक - ५*, १-४.  
[Why Reach Out into Outer Space? (2019). *World Space Week Edition - 5*, 1-4.]
  - आढावा २०१७ मधील खगोलीय घडामोडींचा (२०१८). *खगोल विश्व अंक - ३*, ६-९.  
[Review of Astronomical Developments of 2017 (2018). *Khagol Vishwa Edition - 3*, 6-9.]
  - शोध परग्रहावरील जीवसृष्टीचा (२०१७). *खगोल विश्व अंक - २*, १०-१२.  
[Search for Extra-terrestrial Life (2017). *Khagol Vishwa Edition - 2*, 10-12.]
  - विज्ञान, अवकाश आणि संशोधन (२०१७). *खगोल विश्व अंक - १*, १०-१२.  
[Science, Space & Research (2017). *Khagol Vishwa Edition - 1*, 10-12.]