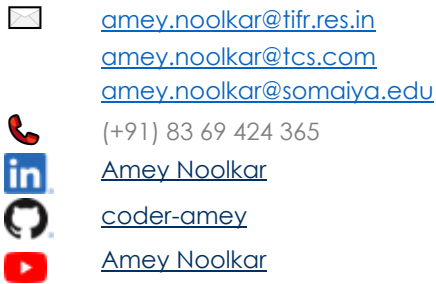


Amey Noolkar



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Onkar Apartment,
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Nashik,
Maharashtra,
India – 422005.



Research Interests

Neural Networks & Deep Learning
Natural Language Processing

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

Professional Experience

Tata Institute of Fundamental Research, Mumbai.

Research Fellow – School of Technology & Computer Science

Dec 2020 – Present

- Working as a Research Associate under 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.
- Studied trends and insights from the data of COVID-19 patients from Mumbai, for a WHO-report on impact of easing restrictions.
- Studied probability distribution of the hospitalization duration among the COVID-19 fatalities in Karnataka and compared the distributions of the first and second waves for Bengaluru City.
- Periodically gathered and reported incremental cases, fatalities and Shifted Case-Fatality Ratios (SCFR) for Mumbai, Maharashtra, India and the world.
- Monte-Carlo simulation modelling of COVID-19 pandemic: implemented vaccination intervention for an SEIRD model.

Teaching Assistant – School of Technology & Computer Science

Aug 2021 – Present

- CSS.212.0: Machine Learning – Currently assisting Prof. Dr. Himanshu Asnani for a post-graduate course on Machine Learning at the STCS, TIFR.

Tata Consultancy Services, Bengaluru

July 2019 – Nov 2020 [On a sabbatical for research]

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

- Contributed to the development of an Analytics Framework for the Deutsche Bank.
- Work involved
 - [Big-Data Analytics using Java and Spark for Business Insights Reporting](#)
 - [Python-based Process Automation for status-reporting](#)
- The framework was used for the retrieval, tracking and reporting of the resource-utilization metrics of a Distributed Cluster.
- Developed Java-based micro-services to retrieve, transfer and handle the metrics data.

Education

K. J. Somaiya Institute of Engineering & Information Technology
Bachelor of Engineering (Computer Engineering)
University of Mumbai.

Aug 2015 – June 2019
CGPA: 7.54/10

Final-Year [Engineering Project](#):

July 2018 – June 2019; 1 year

- Worked on the project titled: **Trigger Algorithm Development using a μ -TCA-based FPGA**, under the guidance of Dr. Raghunandan Shukla at the Tata Institute of Fundamental Research (**TIFR**), Mumbai.
- Contributed to the ongoing development of a classification algorithm 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:
 - Proof-of-Concept [implementation](#) of Unsupervised Machine Learning using a μ -TCA-based Field-Programmable Gate Array (FPGA)
 - FPGA-based Hardware Programming in VHDL
 - UART-based FPGA-Computer Communication Interface in C++
 - Circuit-Level programming of ML algorithms

Undergraduate [Internship](#):

July 2017 – June 2018; 1 year

- Interned on the [Project LHCInfo O2O](#) of the **AlCaDB** team of the **CMS Collaboration** of **CERN** at the Department of High-Energy Physics (**DHEP**), **TIFR**, Mumbai, under the guidance of Prof. Shashikant Dugad and Dr. Ravindra Verma.
- Contributed to the 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

Courses & Workshops

- [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

- 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

- **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

- **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

- 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.]