

Aditya Sharma

Hostel-18, IIT Bombay, Mumbai
☎ +91 7042467227
✉ adityasharma.2000.as@gmail.com
📁 adityasharma2000.github.io

Course : Bachelor of Technology (Computer Science and Engineering)

Current CGPA: 9.27

Institute : IIT Bombay

Expected Graduation : May 2021

Pursuing Minor in **Physics** from **Department of Physics, IIT Bombay.**

Programming Languages and Softwares:

C/C++, Python, Javascript, MATLAB, HTML, CSS, \LaTeX , Git, Linux, SQL and Basic JAVA

Research Projects/Internships

Summer 2019 Scalable Machine Learning,

IST Austria, Austria.

The focus of Alistarh group, led by Prof. Dan Alistarh, is now moving towards the current field of **Scalable Machine Learning**. My scientific internship for the period of 2 months contributed to analyzing and proving bounds for algorithms in **Population protocols**. The basic aim was to analyze algorithms (PopSGD) using **randomized load-balancing** which ran on several nodes and converged faster than sequential algorithms.

Randomized Algorithms

Winter 2018 Distributed Algorithms and Systems,

IST Austria, Austria.

The scientific internship for a period of 7 weeks dealt with the Convergence properties and analysis of **Asynchronous Gradient Descent** for Linear Regression and its comparison with Batch SGD and Vanilla SGD for the same case. Asynchronous SGD converges faster and is dependent on number of interacting nodes. This was done under Prof. Dan who currently leads the Alistarh Research Group at IST. **Publication :** <https://arxiv.org/pdf/1910.12308.pdf>

Summer 2018 Simulations of Natural Gas Hydrates,

IIT Bombay, Mumbai.

The project, under Prof. Vikram Vishal, dealt with the **sensitivity analysis** of Thermo-Hydro-Mechanical-Chemical properties of **Natural Gas Hydrate reservoirs**. Reservoir was simulated using the software TOUGH+ and parameters such as permeability, porosity, grid-sensitivity were varied to conclude upon the sensitivity.

Python, TOUGH+

Winter 2017 Molecular Clouds and their Morphological distribution,

IIST, Thiruvananthapuram.

The project dealt with the Morphological distribution of Molecular Clouds in IRAS 16164-5046, based on images from Herschel Space Observatory and ATLASGAL survey. Images of different wavelengths were convoluted and used together to determine temperature and column densities of gas clouds in space. This project was done under Prof. Anandmayee Tej and Prof. Sarita Vig as a part of NIUS initiative.

Python

Achievements and Scholarships

- Secured All India Rank **51** out of 2,00,000+ participants in **IIT-JEE Advanced 2017**.
- Secured All India Rank **647** out of 1.5 million participants in **IIT-JEE Mains 2017**.
- Awarded AP grade for exceptional performance in CH105 Organic and Inorganic Chemistry.
- Silver Medalist at the 10th **International Olympiad on Astronomy and Astrophysics 2016**, Bhubaneswar, India in which 40+ countries across the globe participated and competed in a series of exams/tests
- Silver Medalist at the 20th **International Astronomy Olympiad 2015**, Kazan, Tatarstan, Russia
- Conferred with **Infosys award** for medal achievers for India **twice**
- Secured **International Rank 3** in **NSO** conducted by **Science Olympiad Foundation** in the year 2015
- Honored with scholarship by **Haryana State Council for Science and Technology**, State Government of Haryana
- Awarded **Kishore Vaigyanik Protsahan Yojana (KVPY-2016)** fellowship by the Department of Science and Technology, Government of India (Secured All India Rank - 5)
- Awarded the **NTSE (National Talent Search Examination)** Scholarship in 2015 by N.C.E.R.T. New Delhi
- Successfully cleared **Regional Mathematics Olympiad (RMO-Delhi)** and selected for the next level **Indian National Mathematics Olympiad (INMO)** in the year 2014 and 2015
- Ranked amongst National top 1% in **National Standard Examinations in Physics, Chemistry and Astronomy (NSEP, NSEC and NSEA)** 2016-2017

Course Projects

Fall 2019	License Plate Recognition using Neural Networks,	<i>Prof. Ganesh, IIT Bombay, Mumbai.</i>
Fall 2019	Toonify,	<i>Prof. Suyash Awate and Prof. Ajit Rajwade, IIT Bombay, Mumbai.</i>
Fall 2019	Transcriptional Bursting in Gene Expression,	<i>Prof. Mithun Mitra, IIT Bombay, Mumbai.</i>
Spring 2019	Return of Coppersmith's Attack,	<i>Prof. Bernard L. Menezes, IIT Bombay, Mumbai.</i>
Fall 2018	Secure Personal Cloud,	<i>Prof. Soumen Chakrabarti, IIT Bombay, Mumbai.</i>
Spring 2018	Surfer Game,	<i>Prof. Amitabha Sanyal, IIT Bombay, Mumbai.</i>

Positions of Responsibility

Spring 2020	Teaching Assistant,	<i>CS101: Computer Programming and Utilization, IIT Bombay.</i>
August 2019	Delegate,	<i>Harvard College Project for Asian and International Relations.</i>
April 2019	Resource Person,	<i>HBCSE, TIFR, Mumbai.</i>
Nov. 2018	Delegate,	<i>Association of Exploration Geophysicists, India.</i>
April 2018	Resource Person,	<i>Nehru Science Center, Mumbai.</i>
2016-2017	Head Boy,	<i>Modern Delhi Public School, Faridabad.</i>