

# Divyanshu Srivastava | Curriculum Vitae

[divyanshu28jan@gmail.com](mailto:divyanshu28jan@gmail.com) | +91-9899522926 | [divyanshusrivastava.github.io](https://divyanshusrivastava.github.io)

## Objective

To attain knowledge and expertise in the field of computational biology, and become an able researcher and contribute to the scientific community.

## Experience

**Researcher** — Life Sciences, TATA Consultancy Services (TATA Research, Development and Design Center), Pune, India Aug 2018 — May 2021

- Primarily worked in microbiology and metagenomics.
- Worked in areas of Text Mining, Data Visualization algorithms, Statistics and Machine Learning

**Teaching Assistant** — Indraprastha Institute of Information Technology, Delhi Aug 2016 — May 2018  
Courses -

- Maths I - Linear Algebra
- Introduction to Mathematical Biology
- Fundamentals of Modern Biology

## Education

**Indraprastha Institute of Information Technology, Delhi** — M. Tech (Computational Biology) Jul 2016 – Aug 2018

- Graduated with **9.26 CGPA**.
- Successfully defended **thesis** on “Graph Signal Processing based analysis of biological networks”.
- Major coursework
  - o Biology  
Cell Biology and Biochemistry, Foundations of Modern Biology, Introduction to Mathematical Biology
  - o Maths and Computing  
Probabilistic Graphical Models, GPU Computing, Statistical Computation

**Cluster Innovation Centre, University of Delhi** — B. Tech (Information Technology and Mathematical Innovations) Jun 2012 – Jun 2016

- Graduated with an **83.61%** aggregate.
- Hold a minor specialization in Electronics and Robotics.

- Major coursework
  - o Information Technology  
Algorithms and Data Structures, Object Oriented Programming, Logic Systems, Computational Linguistics, Databases, Networking, Computer Graphics
  - o Mathematics  
Calculus, Differential Equations, Discrete maths, Linear Algebra, Statistics and Probability, Numerical Methods
  - o Electives  
Physics in motion, Digital Electronics, Control Systems, Robotics

**Lucknow Public School** — XII Standard – CBSE Board 2010 - 2011

- Passed with 88.8 % marks.
- Electives – Physics, Chemistry, Mathematics, Computer Science, English

**Lucknow Public School** — X Standard – CBSE Board 2008 - 2009

- Passed with 93 % marks.

## Skills & Abilities

### 1. Programming Languages

Python, R, MATLAB, Shell Scripting, C, C++, HTML, SQL

### 2. Tools and Technologies

Anaconda, Arduino, CUDA-C, Bash

### 3. Frameworks and Libraries

Scikit-learn, Graph Signal Processing, NetworkX, Keras, MySQL, Natural Language Toolkit, Keras, ScanPy

### 4. Competencies

Data Science, Natural Language Processing, Large scale data processing, Parallel computing, Data visualization.

## Publications

1. **Srivastava, Divyanshu**, Arvind Iyer, Vibhor Kumar, and Debarka Sengupta.  
"CellAtlasSearch: a scalable search engine for single cells." Nucleic acids research 46, no. W1 (2018): W141-W147.

2. **Srivastava, Divyanshu**, Krishanu Das Baksi, Kuntal Kumar Bhusan, and Sharmila Mande. "'EviMass': A literature evidence based miner for human microbial associations." *Frontiers in genetics* 10 (2019): 849.
3. Mishra, Shreya, **Divyanshu Srivastava**, and Vibhor Kumar. "Improving gene-network inference with graph-wavelets and making insights about ageing associated regulatory changes in lungs." *Briefings in Bioinformatics* (Accepted) (2020).
4. Nagpal, Sunil, **Divyanshu Srivastava**, and Sharmila S. Mande. "What if we perceive SARS-CoV-2 genomes as documents? Topic modelling using Latent Dirichlet Allocation to identify mutation signatures and classify SARS-CoV-2 genomes." *bioRxiv* (2020).
5. **Srivastava, Divyanshu**, Ganesh Bagler, and Vibhor Kumar. "Graph Signal Processing on protein residue networks helps in studying its biophysical properties." *bioRxiv* (2021).
6. **Srivastava, Divyanshu**, and Vibhor Kumar. "Graph signal processing based analysis of biological networks." PhD diss., IIT-D, 2018.

## Internships

<b>Defense Research and Development Organisation</b> — Institute of System Studies and Analysis (ISSA), Delhi Studied blast loading effects modelling and its effect on dynamic structures.	Apr 2013 — Jun 2013
<b>PHD Chambe of Commerce</b> — Delhi Under E-Business Circuit, improved IT infrastructure of MSMEs by designing specific software. Specifically developed a Packaging ERP Module and a Pressure Calculator for AMD Industries, Ghaziabad (U.P.).	May 2014 — Jul 2014
<b>Birla Institute of Technology</b> — Department of Computer Science, Noida Campus An ant colony algorithm for scheduling applications to Grid Heterogeneous systems with its implementation on MATLAB.	Apr 2015 — Jul 2015
<b>Defense Research and Development Organisation</b> — Defense Terrain Research Laboratory (DTRL), Delhi Designing and Simulating cognitive models for deceptive military scenarios	Jun 2015 — Nov 2015

## Other Academic Projects

1. Designed an AI based picture puzzle solver on MATLAB.\*
2. GyroBot – An Arduino powered robot remotely controlled from Android smartphone over Bluetooth.\*
3. Smart phone sensor's based automatic body gesture recognition.\*
4. Rewave – A system to control presentations remotely from a mobile device.\*
5. Du Innovation Project - Designing innovative working models and IT based modules to explain concepts of physics and mathematics. Particularly worked on “The Magnet Gun”, “Inclinometer” \*, “Magic Square Application” and “Understanding Gears in a clock”.
6. Web based Clinic Management System - Developed a Web based Clinic Management System for Doctors.
7. Deriving Causal Protein-Signaling Network Using Single Cell Protein level data - We used Information theoretic model selection methods to find causality among 11 proteins and lipids based on flow cytometry data of single cells.

\* Source codes available on [GitHub Profile](#)

## Achievements

1. **IELTS** English proficiency test (2019) – **8.5** aggregate (Reading – 8.5, Listening – 8.5, Writing – 8, Speaking – 8)
2. **GATE** Examination (2016) – Computer Science – **532** score

## Awards

1. Awarded First Prize - “**Best in Robo**” in Innovation Fair organized during Innovation Festival, 2015 held at National Science Centre, New Delhi for Android Controlled Robot.
2. **TCS Citation Award** – 2019 (For the published paper *EviMass*)
3. Awarded “**All-rounder of the year**” award at school.
4. GATE Scholarship – 2016-18

## Positions of Responsibility

1. Sports Captain of the School.
2. Purchase Manager – Autonomi CIC Robotics club
3. Teaching Assistant at both undergraduate and graduate courses.
4. Member and Coordinator – BioBytes Club IIITD Delhi

## Extracurricular Activities

1. Football - (Awarded best defender in corporate tournament, Runner's up in college league)
2. Basketball - Captain of the school team. Also competed at college level.
3. Organized numerous sports and cultural events at school, college and office level.
4. Active contributor to the Stack Exchange network and local data science community.

## Hobbies and Interests

1. Indian and global history, General Awareness
2. Electronics and machines.
3. Bicycling.

## Personal Information

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|-------------------|------------------|
| • Gender          | Male             |
| • Nationality     | Indian           |
| • Date of Birth   | 28 January, 1993 |
| • Languages Known | English, Hindi   |

## External Links

LinkedIn	<a href="https://www.linkedin.com/in/divyanshu28jan">linkedin.com/in/divyanshu28jan</a>
GitHub	<a href="https://github.com/divyanshusrivastava">github.com/divyanshusrivastava</a>
Stack Overflow	<a href="https://stackoverflow.com/users/7041244/divyanshu-srivastava">stackoverflow.com/users/7041244/divyanshu-srivastava</a>
Research Gate	<a href="https://researchgate.net/profile/Divyanshu_Srivastava5">researchgate.net/profile/Divyanshu_Srivastava5</a>
Google Scholar	<a href="https://scholar.google.co.in/citations?user=bp8myG4AAAAJ&amp;hl=en&amp;oi=sra">scholar.google.co.in/citations?user=bp8myG4AAAAJ&amp;hl=en&amp;oi=sra</a>

## Contact Details

Address	C - 2183/21, C Block Indira Nagar Lucknow - 226016 Uttar Pradesh, India
Phone Number	+91-9899522926
Email Address	<a href="mailto:divyanshu28jan@gmail.com">divyanshu28jan@gmail.com</a>
Web page	<a href="https://divyanshusrivastava.github.io">divyanshusrivastava.github.io</a>

## References

1. Dr. Vibhor Kumar  
Assistant Professor, IIIT – Delhi  
[vibor@iiitd.ac.in](mailto:vibor@iiitd.ac.in)
2. Dr. Debarka Sengupta  
Assistant Professor, IIIT – Delhi  
[debarka@iiitd.ac.in](mailto:debarka@iiitd.ac.in)
3. Mr. Kuntal K. Bhusan  
Senior Scientist, TCS TRDDC – Pune  
[kuntal.bhusan@gmail.com](mailto:kuntal.bhusan@gmail.com)

## Declaration

The above information is correct to the best of my knowledge.

Divyanshu Srivastava

20 June, 2021