



Arvind Iyer

Doctoral Student in Quantitative Biology,
Under [Prof Giovanni Ciriello](#),
Department of Computational Biology,
University of Lausanne.

✉ :- arvind.iyer@unil.ch / ayalurarvind@gmail.com

🎓 :- <https://scholar.google.co.in/citations?user=0q8O0ecAAAAJ&hl=en>

👤 :- <https://github.com/Arvindiyeer>

🐦 :- https://twitter.com/Arvind_k_Iyer

🌐 :- <http://arvindkiyer.com/>

Education

Doctoral Student in Quantitative Biology

Department of Computational Biology, UNIL
2019 -Present, Lausanne, Switzerland.

Advisor: Dr. Giovanni Ciriello

Thesis Title: [Genomic & Transcriptomic Signatures for Cancer Evolution](#)

Domain: Computational Cancer Genomics/Oncology

Short Description: Currently working.

Master of Technology in Computational Biology

Center for Computational Biology, IIITD
2016 - 2018, New Delhi India

Advisor: Dr. Lipi Thukral (CSIR IGIB) & Dr. Angshul Majumdar (IIITD)

CGPA: 7.9 /10

Thesis Title: [Revealing Dynamic Architecture of Lipidated Proteins](#)

Domain: Computational Structural Biology & Machine Learning

Short Description: Worked on understanding the sequence and structural properties of lipidated proteins, a class of post-translational modification.

Bachelor of Engineering in Information Technology

Birla Vishvakarma Mahavidyalaya, GTU
2012 -2016, Gujarat India

Advisor: Dr. Keyur Brahmabhatt

Domain: Software Engineering

Project Work: Developed an interactive system to assist lawyers and law enforcement agencies.

CGPA: 8.51/10

Research Experience

Project Assistant

Center for Computational Biology, IIITD
2018-2019, New Delhi, India.

Lab: [Sengupta Lab](#) (Dr. Debarka Sengupta)

Domain: Computational Genomics (scRNA-seq) & Machine Learning

Short Description: Worked on machine learning problem to identify circulating tumor cells using sc-RNA seq datasets.

Research Intern

CSIR-Institute of Genomics and Integrative Biology (CSIR- IGIB)

2017, New Delhi India

Lab: [Computational Structural Biology](#) (Dr. Lipi Thukral)

Domain: Computational Structural biology (MD simulations)

Short Description: Worked on understanding the effect of cancer-related single nucleotide polymorphism on proteins using molecular dynamics simulations.

Research Publications

Manuscript Published/Accepted

Arvind Iyer*, Krishan Gupta*, Shreya Sharma, Kishore Hari, Yi Fang Lee, Neevan Ramalingam, Yoon Sim Yap, Jay West Ali Asgar Bhagat, Balam Vishnu Subramani, Burhanuddin Sabuwala, Tuan Zea Tan, Jean Paul Thiery, Mohit Kumar Jolly, Naveen Ramalingam, and Debarka Sengupta. "Integrative analysis and machine learning based characterization of single circulating tumor cells." **Journal of Clinical Medicine** 9.4 (2020): 1206, <https://doi.org/10.3390/jcm9041206> (IF:- 5.68)

Divyanshu Srivastava*, **Arvind Iyer***, Vibhor Kumar, Debarka Sengupta; "CellAtlasSearch: a scalable search engine for single cells", **Nucleic Acids Research**, gky421, <https://doi.org/10.1093/nar/gky421> (IF:- 11.147)

Neelansh Garg*, Apuroop Sethupathy*, Rudraksh Tuwani*, Rakhi NK*, Shubham Dokania*, **Arvind Iyer***, Ayushi Gupta*, Shubhra Agrawal*, Navjot Singh*, Shubham Shukla*, Kriti Kathuria*, Rahul Badhwar, Rakesh Kanji, Anupam Jain, Avneet Kaur, Rashmi Nagpal, Ganesh Bagler; "FlavorDB: a database of flavor molecules", **Nucleic Acids Research**, Volume 46, Issue D1, 4 January 2018, Pages D1210–D1216, <https://doi.org/10.1093/nar/gkx957> (IF:- 11.147)

Manuscript in Preparation/Submission

Arvind Iyer*, Nidhi Jatana, Angshul Majumdar, Lipi Thukral; "Global Analysis elucidating sequence and structural properties of Lipidated proteins."

Sanchita Jain*, Surabhi Rathore*, **Arvind Iyer**, Lipi Thukral; "m-Mechanics: A comprehensive resource of membrane mechanical proteins."

Marco Mina, **Arvind Iyer**, Daniele Tavernari, Franck Raynaud, Giovanni Ciriello "Discovering functional evolutionary dependencies in human cancers"

*co-first/first authors

Academic Awards & Achievements

Awarded **Best Teaching Assistant award** for the course **Algorithms in Computational Biology** conducted in Monsoon semester 2017-2018

Won **Best Poster Award** in **EMBO-INDIA Symposia on Big Data in Biomedicine** held at New Delhi 25th -27th February 2018.

Qualified **GATE** (Graduate Engineering Examination) in 2016 in Computer Science.

Mini Projects

Network analysis of *C. elegans* neuronal network.

- Used Network Biology concepts to understand network properties of *C.elegans* connectome.

Brugada Syndrome:- Studying the structural defects in sodium ion channel protein.

- As a practical bioinformatics project studied about disease and gene, proteins related to it. The project is available at <https://arvindkiyer.bitbucket.io/brugada/>.

Mathematical Modeling of Parkinson's Disease based on Inverse Warburg effect

- As a course project made an ODE model for Parkinson's Disease by concentrating on the oxphos cycle and inverse Warburg effect.

Implemented a Work-Sharing Runtime: Cotton in C++

- As part of a parallel programming course, I implemented a work-sharing runtime to run jobs in parallel.

Skills & Hobbies

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- **Programming Language:** Python, C, C++, Java, C#, Javascript, SQL, NoSQL, R, Cytoscape, Openbabel, PHP, etc.
 - **Languages:** English, Tamil, Hindi, Gujarati.
 - **Hobbies:** Reading books, chess, and exploring music.

Teaching & Leadership

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- **Teaching Assistant:**
 - Monsoon 16: TA for an undergraduate course in System Programming.
 - Winter 16: TA for an undergraduate course in Data Structures and Algorithms.
 - Monsoon 17: TA for undergraduate and graduate course in Algorithms in Computational Biology.
 - Winter 17: TA for an undergraduate course in Design and Analysis of Algorithms.
 - **Leadership:**
 - Served as Treasurer of Student Council Body IIITD for 1.5 years
 - Founded Bio-Bytes, a life science club in IIITD, and served as coordinator for 2 years.

References

1] Dr. Giovanni Ciriello

University of Lausanne,
Lausanne, Switzerland.
Tel: +41-216925468
E-mail: giovanni.ciriello@unil.ch
Web: <http://ciriellolab.org/>

2] Dr. Debarka Sengupta

Indraprastha Institute of Information Technology,
Near Govind Puri Metro Station, New Delhi, India.
Tel: 011-26907446
E-mail: debarka@iiitd.ac.in
Web: <http://www.debarka.com/>

3] Dr. Lipi Thukral

CSIR-Institute of Genomics and Integrative Biology,
Sukhdev Vihar, Mathura Road New Delhi, India.
Tel: 91-11-29879 201
E-mail: lipi.thukral@igib.in
Web: <http://www.csblab.in/>