

Muhammad Arif, Ph.D.

Postdoctoral Fellow at National Institute of Health (NIH)



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http://muharif.net

Expertise

Machine Learning, Network
Analysis, Multi-Omics,
Transcriptomics, Proteomics,
Metabolomics

Programming

Python, R, MATLAB, C, PHP,
Shell Script

Teaching Experiences

Bioinformatics, Applied
Bioinformatics, Systems Biology,
Statistics, High Performance
Computing, Thesis Supervision

Languages

English ★★★★★
Swedish ★★★☆☆
Indonesian ★★★★★

Work Experiences

Postdoctoral Fellow | National Institutes of Health (NIH)

2021 – Present | Rockville, MD, United States of America

Jointly appointed by Laboratory of Cardiovascular Physiology and
Tissue Injury (LCPTI), and Section on Fibrotic Disorders (SFD) at
National Institute of Alcohol Abuse and Alcoholism (NIAAA)

Adjunct Faculty (Part-Time) | Mount St. Mary's University

2023 | Emmitsburg, MD, United States of America

Teaching responsibility: MSB 530 (Bioinformatics, Graduate-Level)

Systems Engineer | Cisco Systems

2010 – 2014 | Singapore, Singapore

Part of Global Virtual Engineering team, subject matter expert in
Enterprise Routing. Certifications: CCNP, CCDP, and CCIE (Written)

Education

PhD | KTH Royal Institute of Technology & SciLifeLab, Sweden

2017 – 2021

Systems Biology of Human Diseases. Thesis Title: Systems and
Network-based Approaches to Complex Metabolic Diseases.

Supervisors: Prof. Adil Mardinoglu and Prof. Mathias Uhlén

Master of Science | KTH Royal Institute of Technology, Sweden

2014 – 2016

European Master of Research on Information and Communication
Technologies (MERIT). Double degree program with Universitat
Politécnica de Catalunya (UPC), Barcelona.

Supervisors: Dr. Viktoria Fodor (KTH) and Dr. Albert Cabellos (UPC)

Bachelor of Engineering | Institut Teknologi Bandung, Indonesia

2006 – 2011

Electrical Engineering with concentration track in Control Engineering.

Key Publications

Arif M, et al. (2023). An Integrative Multiomics Framework for Identification of Therapeutic Targets in
Pulmonary Fibrosis. *Advanced Science*.

Arif M, et al. (2021). Integrative transcriptomic analysis of tissue-specific metabolic crosstalk after myocardial
infarction. *eLife*.

Arif M, et al. (2021). iNetModels 2.0: an interactive visualization and database of multi-omics data. *Nucleic
Acids Research*.

Full Publications: [Google Scholar](#) or [Personal Website](#)

Total Publications: 41 | **Citations:** 3460 | **H-index:** 17 (Google Scholar, 14 April 2023)

Awards and Honors

- NIH Summer Mentor Award | 2022
- 2nd Place in NIAAA Trainee Day Data Blitz | 2022

Teaching and Mentoring

Mount St. Mary's University:

- Bioinformatics Graduate-Level (MSB 530) | Lecturer + Course Leader | 2023

National Institute of Health:

- Systems Biology Summer Interns (2 Students) | Supervisor | 2022
- "Data-Driven Biology: The Future of Medical Research" Journal Club | Leader | 2022

King's College London (Virtual due to Covid-19):

- Introduction to Programming and Coding (7NNNMHD2) | Lecturer | 2020, 2021, 2022
- Introduction to Linux (7NNNMHD2) | Lecturer | 2020, 2021, 2022
- Statistical Analysis and Probability (7NNNMHD2) | Lecturer | 2020, 2021, 2022

KTH Royal Institute of Technology:

- Applied Bioinformatics (DD2040) | Teaching Assistant | 2017-2018
- Bachelor's degree Project in Biotechnology (BB200X) | Supervisor | 2018
- Systems Biology of Human Metabolism & Gut Microbiome | Organizer and Lecturer | 2018, 2020
- Bioinformatics (BB24410) | Teaching Assistant | 2019, 2020
- Systems Biology (CB2030) | Teaching Assistant | 2019, 2020

Sover Academy (Virtual):

- Basic Programming (in Indonesian) | Organizer and Lecturer | 2020

Scientific Leadership & Activities

- Leader of "Data-Driven Biology: The Future of Medical Research" Summer Journal Club at NIH | 2022
- Co-organizer of "BYOB: Bring Your Own Bioinformatics" at NIH | 2022 - Present
- Co-organizer of NIH Bioinformatics Coordination Initiative | 2022 - Present
- Judge in 18th NIH Annual Graduate Student Research Symposium | Bethesda, MD | 2021
- Judge in NIH Postbaccalaureate Day 2022 | Bethesda, MD | 2022

Academic Service

- Co-Editor in "Biophysics approaches to investigate multi-organ alcohol-induced damages" Special Issue, *Frontiers in Molecular Biosciences* | 2022, Accepting Submissions
- Active Peer-Review Contributions (*Frontiers*, *iScience*, *FASEB Journal*, *Bioinformatics*, *PeerJ*, *Computational and Structural Biotechnology Journal*, *Scientific Reports*, *Journal of Gerontology*)

Presentations at International Conferences and Meetings

- Keystone Symposia: Fibrosis Pathogenesis and Resolution: From Mechanisms to Therapies | Banff, CA | 2023
- Keystone Symposia: Tissue Fibrosis and Repair (Poster) | Keystone, CO | 2022
- Systems Biology of Mammalian Cells (Poster) | Bremen, DE | 2018
- Chan-Zuckerberg Science Retreat (Poster) | Stockholm, SE | 2018

Training

Technical:

- Introduction to Biomedicine | Stockholm, SE | KTH | 2019
- Tools for Reproducible Research | Stockholm, SE | NBIS | 2018
- Analysis of Data from High-Throughput Molecular Biology Experiments | Stockholm, SE | KTH | 2017
- Single Cell RNA Analysis | Uppsala, SE | NBIS | 2017

Teaching and Communications:

- Scientists Teaching Science | Bethesda, MD | NIH | 2022
- Communicating Research beyond the Academy | Stockholm, SE | KTH | 2020
- Visualize Your Science | Stockholm, SE | KTH | 2019
- Writing Scientific Articles | Stockholm, SE | KTH | 2019
- Supervision Methodology for Diploma Projects | Stockholm, SE | KTH | 2017
- Basic Communication and Teaching | Stockholm, SE | KTH | 2017

Others:

- Ethics in Research Training | Bethesda, MD | NIH | 2022
- Engineering for a Sustainable Society | Stockholm, SE | KTH | 2019