

Omar Ahmed

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WORK EXPERIENCE

Cheif Research Officer - Computational Biology

Verturis Wellness Ltd. | 4/2024 - Present

- Leading a team of software engineers, data scientists, and computational biologists to develop a metagenomics testing platform powered with generative AI.
- Secured MEITY TIDE 2.0 Grant; incubated at Manipal GOK boincubator and NSRCEL IIMB.
- Developed WMS pipelines for ONT platforms, optimizing processes by 42% using GPU acceleration on AWS.

Research Associate - Cardiovascular Data Science

Magdi Yacoub Global Heart Center | 2/2024 - Present

- Led a taskforce to build new HPC hardware and database architecture, securing capacity for 15 years of workload.
- Built reproducible DNA-seq and RNA-seq pipelines with Snakemake and Nextflow. Reduced analysis time by 82%.
- Collaborated with clinicians, geneticists, and engineers to integrate research findings into clinical practice.

Bioinformatics Intern

Mounir Armanios Research Center | 7/2023 - 10/2023

- Built automated pipelines for WES and WGS analysis.
- Benchmarked tools for preprocessing and variant calling.

Publications

Integrative Systems Biology of Autism Spectrum Disorder: From Genomics to Machine Learning

- Frontiers in Neuroscience (In Review)

PROJECTS

Feature Selection from Autism Spectrum Disorder Gene Expression Data Using a Novel Mixed Kernel

- Developed a mixed kernel SVM method for feature selection, improving ASD gene expression data classification.

Antimicrobial Activity of a Synthetic Cyclic Peptide

- Designed, synthesized, and tested a novel antimicrobial cyclic peptide from AUC Red Sea metagenomic library.

Analysis of HGT Activity in Red Sea Brine Pools

- Performed 16s analysis on 147 samples, investigating HGT activity and functional independence dynamics in Three Red Sea brine pools.

EDUCATION

The American University in Cairo

B. Sc. Molecular and Cell Biology, with minors in Bioinformatics and Chemistry | 6/2024

- Graduated with High Honors; Full merit scholarship recipient.

SKILLS

Technical Skills

Python, R, C++, Bash, SQL, NGS Analysis, Snakemake, Nextflow, Machine Learning, CUDA, HPC, Cloud Computing, Git.

Additional Skills

Manuscript Writing, Graphic Design (Adobe Suite), Flutter.

Languages

Arabic (Native), English (Fluent), German (Intermediate)

TRAININGS

Next Generation Models for Cardiovascular Disease

Amsterdam UMC, Charité Berlin, and MYHF | 12/2024

International Summer School in Global Health

Barcelona Institute for Global Health | 9/2023

CERTIFICATES & ACHIEVEMENTS

BIOHACK I Hackathon Winner

GARN - Computational Life Sciences | 6/2024

Heart Hackathon Finalist and Most Novel Idea

Heart Hackathon | 4/2024

iCAN International Golden Medal

Toronto International Society of Innovation | 8/2023

VOLUNTEER EXPERIENCE

Youth Development Programs Consultant

Ministry of Youth | 8/2017 - Present

- Led programs for 17,000+ delegates in 18 governorates.
- Pioneered nine presidentially sponsored youth initiatives.

President

Astronomy Club Egypt | 9/2022 - 6/2024

- Led the 10th Egypt Astronomy Conference and Podcast.
- Led the first Egyptian Space Camp for 300 juniors at AUC.