

Ahmed Mokhtar Ramzy Salem

Bioinformatician · Educator · Computational Biology Engineer

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PROFILE

Bioinformatics scientist with a biotechnology background, focused on cancer genomics and transcriptomics. MSc candidate at Cairo University; postgraduate-diploma trained at Suez Canal University. Six-plus years teaching bioinformatics - from NGS foundations to single-cell and spatial transcriptomics - and shipping reproducible R/Python pipelines for independent research and clinical collaborations.

EXPERIENCE

Freelance Instructor - Bioinformatics & Biotechnology

May 2019 - present

Remote · BioScience and independent cohorts

- Designed and delivered courses across Bioinformatics Foundations, NGS, RNA-Seq, Genomics Data Science, scRNA-Seq, and Immunogenetics.
- Trained 1,000+ mentees and researchers across Egypt, MENA, Africa, and Europe; international cohorts and 1:1 mentoring sessions.
- Built reproducible R/Python pipelines and project-based curricula for graduate students and biotech professionals.

Teaching scRNA-seq Bulk RNA-seq

Teaching Assistant - Biotechnology Department

Feb - Jul 2023

Heliopolis University, Egypt

- Biostatistics and Research Methodology - course materials, examinations, lab supervision and faculty accreditation work.

Teaching

Research Intern - Biomedical Research Lab

Jul - Oct 2017

Heliopolis University, Egypt

- Wet-lab molecular biology and early bioinformatics workflows.

Wet lab

SELECTED PROJECTS

- [2025] Dual-branch autoencoder for Brassica napus - 1.89x QTL enrichment, +90.8% genomic-prediction gain over GRM-GBLUP.

ML/AI Multi-omics

- [2024] Single-cell dissection of human invasive ductal carcinoma (10x 3? v3.1) - Seurat / Harmony / SingleR end-to-end.

scRNA-seq Cancer genomics

- [2024] TAM metabolic profiling in IDC - scMetabolism + CellChat ligand-receptor crosstalk.

scRNA-seq Cancer genomics

- [2024] Visium spatial atlas of human breast cancer - tissue-aware QC, niche discovery, STdeconvolve.

Spatial Cancer genomics

- [2023] DevOps-driven ML pipeline for lung-cancer scRNA-seq - Docker, MLflow, parameterized runs.

DevOps ML/AI scRNA-seq Cancer genomics

- [2022] In-silico CRISPR-Cas9 guide design & evaluation for human TP53.

CRISPR Cancer genomics

PUBLICATIONS

ACCEPTED

Comparative Genomics Analysis of Some Brassica napus Accessions

Journal of Scientific Research in Science (2025)

UNDER REVIEW

Multi-Dimensional TCR-beta Repertoire Characterization in Anti-PD-1-Treated Non-Small Cell Lung Cancer: Development and Multi-Cohort Validation of the Composite Immune Reprogramming Score (CIRS)

Journal of Scientific Research in Science (2025)

EDUCATION

Sep 2023 - Sep 2025

MSc Molecular Genetics · Bioinformatics

Cairo University, Faculty of Agriculture

Thesis: "Comparative Genomics Analysis of Some Brassica napus Accessions."

Jan 2025 - Jan 2027

MBA · Marketing

Arab Academy for Management, Banking & Financial Sciences (AAMBFS)

in progress

MicroMasters · Statistics & Data Science

MITx

Oct 2019 - May 2021

Postgraduate Diploma · Bioinformatics

Suez Canal University

2018 - 2019

Diploma · Data Science

Epsilon AI Institute

2018 - 2019

Diploma · Data Analysis

Arab Academy for Science, Technology & Maritime Transport (AASTMT)

Oct 2013 - May 2017

BSc Agricultural Sciences · Biotechnology (B+)

Cairo University (English program)

SKILLS

PROGRAMMING

R · Python · Bash · Scala · SQL

BIOINFORMATICS

Seurat · DESeq2 · edgeR · Monocle3 · HISAT2 · Kallisto · Bowtie2 · BWA · SAMtools · FeatureCounts · MiXcr · TRUST4 · GATK · Bioconductor

ANALYSES

Bulk & scRNA-Seq · Spatial transcriptomics · Cancer genomics · Multi-omics · Exome · TCR · DE / Pathway / GO · Survival

ML & STATS

Random Forest · Neural Nets · PCA / t-SNE / UMAP · Clustering · Hypothesis testing · IBM SPSS

INFRA

Docker · Kubernetes · Git / GitHub / GitLab · CI/CD · AWS · GCP · Linux / HPC

DATABASES

NCBI · Ensembl · UniProt · GEO · TCGA · SQL · MongoDB

LANGUAGES

Arabic (native) · English (TOEFL 553)

REFERENCES

Dr. Jaqueline Nielsen Saddik

Lecturer, Microbiology & Immunology, Nahda University

Available on request

Dr. Zainab Zakaria

Associate Professor, Molecular Biology, Saxony Egypt University

Available on request