

ARZU KIRICI, M.Sc.

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in arzukirici

📍 Toronto, Canada

Profile

Transforming complex single-cell and spatial omics datasets into actionable immunology insights with Python, R, and advanced bioinformatics. Experienced molecular biologist and data analyst with expertise in multi-omics integration (scRNA-seq, bulk RNA-seq, spatial). Adept at QC, annotation, and advanced statistical analysis in Linux environments with Nextflow pipelines and Git. Proven track record of delivering insights in immunology and translational research through collaborative, cross-functional projects.

Professional Experience

PROJECT ANALYST

Apr 2025 – Present

Astraea Bio (Remote, Part-time Contract)

Toronto, Canada

Support spatial and single-cell omics research (Stomics—gene expression; MSI—metabolites/peptides/glycans; COMET—immunofluorescent images) while coordinating project documentation, cross-functional workflows, and stakeholder communications.

- Developed and maintained pipelines for analysis of **single-cell, bulk RNA-seq, and spatial transcriptomics datasets** using Python, R (Seurat, Scanpy), and AnnData.
- Performed **QC, annotation, and integration** of multi-omic datasets to generate actionable biological insights.
- Collaborated with wet-lab and computational teams to deliver results for immunology and translational research projects.
- Documented SOPs and data handling workflows to standardize metadata capture, reporting, and reproducibility.

PANORAMICS - A Vision

Feb 2025 – Present

Computational Biologist - Executive Member

Toronto, Canada

- Aggregated, cleaned, and QC'd multi-source datasets; created analysis-ready tables to support reproducible reporting.
- Built compact dashboards and summary tables using spreadsheets and Python/R scripts to track performance indicators.
- Prepared figures and one-page summaries; communicated technical findings in accessible language for diverse stakeholders.

LABORATORY TECHNICIAN

Feb 2022 – Apr 2023

Tikkle Scientific (On-site, Part-time Contract)

Toronto, Canada

Supported high-throughput RT-PCR COVID-19 testing for clinical and industry clients, ensuring compliance with strict QC protocols.

- Processed biospecimens and performed **RNA extraction and RT-PCR testing** using validated kits.
- Ensured accurate result interpretation and maintained sample documentation via LIMS.
- Contributed to daily quality control and upheld biosafety standards in a regulated lab environment.

SENIOR BIOLOGIST

Aug 2020 – Sep 2021

Mikrogen Genetic Disease Diagnostic Center (On-site, Full-time)

Ankara, Turkey

Led molecular diagnostics and genomics workflows including WES, WGS, and targeted genetic testing for oncology, prenatal, and rare disease applications.

- Performed **DNA/RNA extraction, PCR/qPCR, and NGS library preparation** under regulated clinical standards.
- Conducted **variant analysis and data validation** to support clinical genetic reporting.
- Maintained LIMS documentation and ensured adherence to SOPs, QC/QA protocols, and regulatory compliance.

RESEARCH ASSISTANT

Sep 2015 – Jan 2016

Wageningen University, Laboratory of Plant Physiology (On-site, contract)

Wageningen, The Netherlands

Researched seed physiology and genetic, and investigated the EPPO method for seed dormancy release and aging.

- Assisted in research involving plant genetic analysis using PCR and gel electrophoresis and contributed to lab operations and documentation.
- Contributed to a published research article on seed dormancy mechanisms.

Other Trainings

micro-ELISA technique, EUROIMMUN Academy

Forensic Biology and Biotechnology Training (Applied Course) by Association of Forensic Scientists

- 60-hour intensive training on forensic biology and biotechnology
- Covered applied techniques in forensic biotechnology

Education

Graduate Diploma in Computer Programming

2021 – 2023

Seneca College, Toronto, ON

Master of Science, MSc in Biology

2015 – 2019

Ankara University, Ankara, Turkey

Laboratory: Prof. S. Aras Lab, Division of Biotechnology, Department of Biology, Faculty of Science.

Key Contributions: Managed & supervised BSc students for their dissertation. Ensured continuous learning & scientific expertise while attending scientific events. Received best poster presentation awards in Paris, France.

Main MSc Topic: Investigation of the YABBY and DOF transcription factors at gene expression level during drought stress conditions in *Phaseolus vulgaris* L. and the effect of salicylic acid.

Skills: qRT-PCR, RNA-seq, Gel Electrophoresis, Data Analysis, CRISPR-Cas9, Microscopy, Plate-Based Assays, Python for Data Analysis.

B.Sc. in Biological Sciences

2010 – 2014

Ankara University, Ankara, Turkey

Peer Reviewed Publications

- Contributed to findings published in: Gonda Buijs, Jan Kodde, Steven P C Groot, Leónie Bentsink, *Seed dormancy release accelerated by elevated partial pressure of oxygen is associated with DOG loci*, **Journal of Experimental Botany**, Volume 69, Issue 15, 10 July 2018, Pages 3601–3608, (DOI: 10.1093/jxb/ery156).
- Kirici AG, et al. Abstract–'Investigation of the YABBY and DOF transcription factors at gene expression level during drought stress conditions in *Phaseolus vulgaris* L. and the effect of salicylic acid.' Proceedings: SciTechnol.

Volunteering & Customer Facing Part-Time Work

CReSCENT: CanceR Single Cell ExpressioN

Oct 2023 – April 2025

Public Curator, Volunteer

Toronto, Canada

- Integrated and curated 145 brain-related single-cell RNA-seq datasets (approx. 938,000 cells) from 15 publications for the CReSCENT platform.
- Focused on datasets covering brain-related diseases like multiple sclerosis and Alzheimer's, along with brain cancer data including hallmark glioblastoma publications and medulloblastoma to meet Brain Canada grant targets for the PMGC Single Cell Initiative.

FOODBASICS

Oct 2021 – Present

Supervisor

Toronto, Canada

- Oversaw daily operations across produce, cashier, and bookkeeping areas, ensuring smooth workflow, team coordination, and high standards of customer service and inventory management.