

# Amr Salem

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1715 E 115<sup>th</sup> ST, Cleveland | (216)3941073 | ams716@case.edu | Expected Graduation: Spring 2026

## OBJECTIVE

Motivated BS/MS student in Applied Mathematics and Biostatistics with expertise in statistical modeling, machine learning, and data analysis. Seeking to leverage proficiency in R, Python, and SQL to drive insights from complex healthcare datasets and contribute to data-driven research initiatives that enhance patient outcomes.

## EDUCATION

### Master of Science in Biostatistics | CASE WESTERN RESERVE UNIVERSITY

- Related Coursework: Epidemiology, Statistical Programming, Biostatistical Consulting, Statistical Methods, Design & Analysis of Sequencing Studies, Machine Learning & Data Mining

### Bachelor of Science in Applied Mathematics | CASE WESTERN RESERVE UNIVERSITY

- Minor: Computer Science
- Related Coursework: Mathematical Modelling, Programming in Java, Data Structures, Artificial Intelligence, Data Science Systems, Numerical Analysis, Linear Algebra

## EXPERIENCE

### Research Assistant | University Hospitals Cleveland Center | November 2022-PRESENT

- Working part-time directly with Dr. Wilfred Chen-Han Wu at the nation's first 'Urogenetics' Laboratory, utilizing data analysis to support kidney stone research.
- Developed a robust pipeline for Polygenic Risk Score (PRS) computation using tools like PLINK, Hail, and R, analyzing large genomic datasets and performing GWAS to identify key genetic variants.
- Worked on EHR and Genetic data using SQL queries to efficiently extract and manipulate patient records, enhancing disease risk prediction and supporting personalized medicine insights.
- Developed deep learning-based polygenic risk score (PRS) models to evaluate genetic risk factors associated with various health outcomes.
- Investigated the natural history of disease progression by leveraging longitudinal EHR (Coded in ICD-10) data, utilizing SQL for data extraction and cohort identification across various timepoints and clinical settings.
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## ACTIVITIES

### Co-Founder | Student Advocacy Group | May 2023- May 2024

- Co-founded and developed a confidential peer support hotline to provide short-term crisis intervention for students facing sexual violence, discrimination, and harassment.
- Collaborated with the Office of Equity and the Flora Stone Mather Center for Women to recruit and train over 40 student volunteers, and established an internal judicial board for accountability.

### VICE-PRESIDENT | CWRU STUDENT GOVERNMENT | AUGUST 2022- AUGUST 2023

- Led a committee of 10 elected members that worked to organize campus wide Diversity and inclusion events
- Advocated for undergraduate students before various administrative bodies and during multiple campus events, ensuring their voices and concerns were effectively communicated.

## SKILLS

- **Statistical Analysis:** Hypothesis Testing, Regression Analysis, Statistical Analysis,
- **Languages:** Python, SQL, Java, R, SAS
- **Data Visualization:** ggplot2, Matplotlib, Seaborn, Tableau, Plotly
- **Machine Learning:** Neural Networks, scikit-learn, TensorFlow, PyTorch