Sammy Mustafa

sammymustafa@gmail.com | (201) 957-4754 | https://sammymustafa.github.io

EDUCATION

Harvard Medical School | Longwood, MA
    Master of **Biomedical Informatics**   December 2024

Northwestern University | Evanston, IL
    Honors Program in Medical Education (**HPME**): 7-year BA/MD program   June 2023
Bachelor of Arts in **Biological Sciences**, Concentration in **Computational & Systems Biology** | Minors: **Data Science** & **Linguistics**
    GPA: 3.92/4.00 | Dean's List (8/9 Quarters)

Relevant Courses: Bioinformatics, RNA Sequencing, Functional Genomics, Biostatistics, Data Science I-III (R), Data Visualization, Computer Programming (Python), Statistics for Language Sciences, Text Processing, Organic Chemistry, Biochemistry

SKILLS

Languages: R | Python | C++ | Unix | MATLAB | HTML | SQL | JavaScript
Techniques: AI | Machine Learning | BLAST | Genomics | RNA-Seq | DGE | ChimeraX | Data Visualization | EPA | Microsoft Office
Spoken Languages: Spanish (Intermediate) | Arabic (Beginner)

RESEARCH EXPERIENCE

Mercurial-AI | Chicago, IL
Strategy Consultant and Project Manager, AI Tech Start-Up   March 2023 – Present
- Develop, implement, and present strategic and operational changes to garner seed capital from venture capital funds
- Lead and overlook the development of deep ensemble neural network technologies aiding underserved breast cancer patients

Feinberg School of Medicine, Department of Medicine (Cardiology) | Chicago, IL
Research Fellow, Vaughan Lab   March 2021 – June 2023
- Probed the RNA-binding protein SERBP1 to combat PAI-1 induced fibrosis, senescence, aging, and Alzheimer's *in vitro*
- Developed a novel, transgenerational epigenetic method of prion-mediated PAI-1 destabilization
- Modeled and visualized genomic, plasma, and genealogic data from Amish community with unique null mutation via R

Polytechnic University of Catalonia, Department of Physics | Barcelona, Spain
Research Assistant, Computational Biology and Complex Systems Lab   June 2022 – September 2022
- Designed mathematical and spatial resolution models of the cAMP-PDE signaling pathway in atrial myocytes via MATLAB
- Created differential formulas to model the autonomic effects and calcium levels of atrial fibrillation risk variant rs13143308T

Yale University, School of Management | Remote
Research Assistant, Behavioral Research Lab   March 2022 – July 2022
- Collaborated with an inter-institutional team of professors investigating negotiation strategies between buyers and sellers
- Cleaned, explored, and analyzed negotiation language data, identifying optimal linguistic behaviors via Python and Unix

Bergen County Academies, Cell Biology Research | Hackensack, NJ
Research Fellow, Cell Biology Lab   September 2016 – June 2020
- Studied the PTEN pseudogene in regulating the PI3K/Akt pathway in glioblastomas via miRNA repression *in vitro*
- Conducted bacterial transformation, transfection, qRT-PCR, ELISA, flow cytometry, autophagy and migration assays, etc.

PUBLICATIONS & PROJECTS

- ONGOING: Probing the potential of first-degree relatives' panomic data with machine learning techniques for more personalized and effective treatment recommendations for mental health disorders like depression (**Precision Psychiatry**)
- Predictive NLP Machine Learning Model identifying Classification of 30,000 Medical Abstracts
- Predictive and Machine Learning Regression Models for US County Cancer Mortality Rates
- Personalized Anxiety-Relief Song Recommendations via Spotify API
- *SERBP1: Exploiting RNA-Binding Protein-Mediated PAI-1 Inhibition*
- *PTENP1: A Pivotal Pseudogene in Glioblastomas*

HONORS & AWARDS

HPME (2021) and Weinberg (2022) Summer Research Grants   Regeneron Science Talent Search Scholar
2nd Place – Biochemistry, BCA Research Exposition   Thermo Fisher Scientific Antibody Scholarship ($5,000)

WORK EXPERIENCE

Northwestern University Residential Services | Evanston, IL
Resident Assistant   August 2021 – June 2023
- Oversaw 44 residents, served overnight duty shifts, worked the front desk, and developed community builder events
- Represented the RAs on the RA Advisory Board, advocate for adjustments to the position and services