

# Michael J. Akinyemi

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## RESEARCH INTERESTS

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Computational Biology, Biotechnology, Immune Engineering, Systems Biology/Immunology, Structural Biology, Molecular Biophysics, Autoimmune Disorders

## EDUCATION

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**University of Central Florida** Orlando, FL  
Biotechnology (B.S.) & Computer Science (B.S.) Spring 2025  
Genomics & Bioinformatics (Minor)

- GPA: 3.17
- Ronald E. McNair Scholar
- Relevant Coursework:
  - *CS: Discrete Structures I, Computer Science II, Computer Logic & Organization, Object Oriented Programming*
  - *Bio: Immunology, General Microbiology, Biochemistry I, Genetics I, Quantitative Biological Methods*

**Tallahassee Community College** Tallahassee, FL  
Associate of Arts (A.A.) Summer 2022

- GPA: 3.88
- Phi Theta Kappa Honors Society

## RESEARCH EXPERIENCE

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**University of Central Florida** Orlando, FL  
**College of Medicine** December 2023 — Present  
Research Assistant  
*Advisor: Dr. Hung Nguyen*

- Independently developed immune cell datamining pipeline to analyze PBMC scRNA-Seq datasets to discover correlations between metabolic activity and the grafts vs leukemia (GvL) effect.
- Investigated correlation between gut microbiome and immune cell behavior using machine learning models to integrate 16S rRNA-Seq & various sc-Seq assays

**Massachusetts Institute of Technology** Cambridge, MA  
**Department of Chemical Engineering** June 2023 — Present  
Research Assistant (*MSRP General 2023 & 2024*)  
*Advisor: Dr. Brandon DeKosky*

- Contributed to a project improving the efficiency of cell line generation for antibody library display systems.
- Successfully troubleshoot restriction cloning experiments for construction of donor plasmid for CRISPR/Cas9 system.
- Optimized clustering algorithms within bioinformatics pipelines to analyze BCR/TCR immune repertoire data collected through NGS.
- Developed automated data visualization tools capable of handling high-throughput sequence data.

## PRESENTATIONS

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**Student Scholar Symposium** Orlando, FL  
*University of Central Florida* March 2024

**Annual Biomedical Research Conference For Minoritized Scientists (ABRCMS)** Phoenix, AZ  
*American Society for Microbiology* November 2023

**MSRP Fall Extension Research Showcase** Virtual  
*Massachusetts Institute of Technology* November 2023

**MIT Summer Research Program Research Showcase** Cambridge, MA  
*Massachusetts Institute of Technology* July 2023

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## OTHER EXPERIENCES

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**Quantitative Methods Workshop**

Massachusetts Institute of Technology

Cambridge, MA

January 2023

- Employed principal component analysis (PCA) and k-means clustering to differentiate cells of a scRNA-Seq PBMC data set.
- Used machine learning pipelines (CryoSPARC) to generate 3D protein structures from high-framerate movies of CryoEM data.

**Scripting Team Leader**

AvatarMC

Remote

May 2017 — June 2022

- Developed both command-line & GUI-based automation tools to assist workflows of other teams.
- Designed quality assurance testing plans for experimental features.
- Assisted in writing & maintaining documentation of in-house scripting language.
- Wrote design documents for deliverable requests/feature improvement tasks.
- Led projects using professional management software (Phabricator).
- Directed team meetings & effectively delegated tasks.

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## HONORS, AWARDS & SCHOLARSHIPS

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**McNair Summer Research Institute Scholarship***Ronald E. McNair Scholars Program*

Orlando, FL

August 2023

**Conference Presentation Travel Award***UCF Office of Undergraduate Research*

Orlando, FL

November 2023

**Florida Bright Futures Academic Scholars***Florida Department of Education*

Tallahassee, FL

December 2020

**President's List (3 Times)****Dean's List (2 Times)**



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## KNOWLEDGE & SKILLS

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** Biological Research**

Restriction Cloning, Electroporation, Polymerase Chain Reaction (PCR), Gel Electrophoresis, Agarose Gel Extraction, Immunoprecipitation, Cell Culture, Murine Model Handling, Miniprep, Maxiprep, Autoclave Handling, Centrifuge Handling, Pipette Handling, Petri Dish Handling

** Programming Languages**


Python	Professional.
Bash/Shell	Advanced.
R	Advanced.
C++	Intermediate.
Java	Intermediate.
RegEx	Elementary.

** Software**

Git	Advanced.
Jupyter	Intermediate.
PyMol	Intermediate.
Slurm	Intermediate.
Docker	Elementary.

** Document Composition**


LaTeX	Advanced.
Word	Advanced.
Power-Point	Advanced.

** Operating Systems**

Linux/UNIX	Professional.
Windows	Advanced.
HPC-Clusters	Advanced.

** Microcontroller Development**

Arduino	Elementary.
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** Natural Languages**

English	C2 level.
Spanish	A2 level.
Yoruba	A1 level.

## COMMUNITY INVOLVEMENT

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**Society for the Advancement of Chicanos/Hispanics and Native Americans  
in Science (SACNAS) — Vice President**  
University of Central Florida

Orlando, FL  
April 2024 — Present

- Assisted president in managing club and leading officer meetings.
- Held general body meetings discussing tips/advice to help underrepresented students get started in research and the journey to graduate school.

**Active Minds — Secretary**  
University of Central Florida

Orlando, FL  
December 2023 — Present

- Advocated for mental health and the importance of fighting against the negative stigmas associated with them.
- Organized club records, took meeting minutes & performed general administrative duties.