

Jai Mehta

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Education

University of Tennessee

BS in Honors Computer Science, Chemistry

Minors in Pre-Health Professions, Molecular Biophysics

Aug. 2023 – May 2027

GPA: 4.00/4.00

Wilson Central High School

Salutatorian, High School Diploma

May 2023

GPA: 4.55/4.00

Coursework

Computer Science Courses: Data Structures, Algorithms, Computer Organization, Discrete Structures, Probability and Statistics, Linear Algebra, Calculus I & II

Medical Courses: Cellular and Molecular Biology, General Chemistry (with Lab), Organic Chemistry I & II (with Lab), Biochemistry, Physics I & II

Experience

Teaching Assistant

Introductory Computer Science in C++, COSC 102

Knoxville, TN

Aug. 2024 – Present

- Hosted weekly office hours to assist students with labs
- Assisted in topics related to learning Linux, basic data structures, dynamic memory, recursion, file I/O, searching algorithms, and binary logic.

Research Member

Emrich Lab

Knoxville, TN

Aug. 2024 – Present

- Utilizing scRNA-seq data to further understand cell state plasticity.

Research Intern

Yu Lab, St. Jude Children's Research Hospital

Memphis, TN

July 2024 - Aug. 2024

- Evaluated a multi-informational clustering algorithm using scATAC-seq data with scRNA-seq labels to observe misclassification levels between cell phenotypes. Utilized Euclidean and Cosine distance estimation methods.
- Tested "Memory-like" and "Effector-like" cell states defined by a Gaussian Mixture Model using Joint Embedding, Differential Expression, and Gene Set Enrichment Analysis on clinical CAR T data.
- Combined clinical CAR T data, ran through Gaussian Mixture Model, and tested to observe similarities between individual clinical datasets and combined data.

Research Intern

Oak Ridge National Lab, Center for Molecular Biophysics

Oak Ridge, TN

Nov. 2023 - Aug. 2024

- Tested an in-house Machine Learning model against other models to evaluate Area Under the Receiver Operating Characteristic Curve (AUC-ROC) scores regarding prediction of T Cell Receptor to epitope binding specificity.

Presentations and Talks

Defining Effector and Memory-like Cell State In in-vivo CAR T Cells from Multi-center Clinical Trials

- UTK Undergraduate Research and Fellowships Discovery Day, Knoxville, TN, Sep. 2024.
- SASE National Conference, Computational Sciences Division, Boston, MA, Oct. 2024.

Panelist for *Student Panel for Undergraduate Research*, Knoxville, TN, Nov. 2024.

Selected Awards

Tau Beta Pi Honors	2024
Cook Grand Challenge Engineering Honors	2023
Chancellor's University Honors	2023
National Merit Scholar	2023
Distinguished Tennessean Scholar	2023
Ned McWherter's Scholar	2023
John Tummins Memorial Scholarship	2023
National Youth Science Camp Attendee	2023
Eagle Scout	2022

Technologies

Programming Languages: C++, Assembly, R, Java, R, Python, Bash

Skills: SciKit-Learn, ScanPy, Seurat, MacOS, Windows, Linux, Raspberry Pi, Arduino, Vim, Jupyter Notebook, GitHub, LaTeX, Single Cell Analysis, Machine Learning, High Performance Computing