DOMINIQUE DANG

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA — MAY 2027

Candidate for Bachelor of Science in Computer Science & Molecular Biology
Relevant courses: Biochemistry, Genetics, Cell Biology, Algorithms, Probability & Statistics, Linear Algebra, Fundamentals of Programming

EXPERIENCE & PROJECTS

Oncology Data Science Intern, Novartis — MAY 2025 - AUG 2025

- Developed a machine learning model using Python and R to predict tumorigenesis of human cancer cell lines in mice models
- Integrated differential gene expression analysis and gene set enrichment analysis to inform predictive features
- Applied gene signature scores to single-cell RNA-seq data from human breast cancer tumors to identify malignant subpopulations with high engraftment potential

Undergraduate Researcher, Novartis— *Eliezer Calo Lab* — JAN 2025 - PRESENT

- Analyzing nanopore sequencing data to resolve tRNA splicing patterns and detect RNA modifications
- Developed and optimized bioinformatics pipelines incorporating tools such as NanoPlot (read QC), BWA (read alignment), and DESeq2 (differential expression/statistical analysis)

Genetics Medicine Scholar, Eli Lilly — *Eli Lilly Genetics Medicine* — JAN 2025 - JAN 2025

- Conducted disease pathology mapping and target identification using molecular profiling and preclinical models to discover novel therapeutic targets
- Designed and executed drug development strategies including preclinical study planning, therapeutic design, and regulatory submissions to advance therapies toward clinical approval

Undergraduate Researcher, MIT — *Anders Hansen Lab* — JAN 2024 - JAN 2025

- Characterized and validated bidirectional gene promoters to develop a novel tool for gene co-regulation, by utilizing Fluorescence-Activated Cell Sorting (FACS) and MATLAB to analyze protein expression levels and identify significant patterns and trends

Young Scholar's Program, Northeastern University — *Rouzbeh Amini Lab* — JUN - AUG 2022

- Investigated mechanical properties of the tricuspid valve in porcine hearts through biaxial mechanical testing to analyze stress-strain relationships, contributing as second author to a **publication**

LEADERSHIP & WORK EXPERIENCE

MIT Museum — *Education Assistant* — MAR 2023 - PRESENT

- Facilitated the Maker Hub and Learning Lab, encouraging and educating over 50 daily visitors on STEM topics through interactive activities and hands-on demonstrations

HackMIT — *Logistics Director* — FEB 2024 - PRESENT

- Led a 15-member subteam to organize HackMIT, the largest U.S. collegiate hackathon, enhancing operational efficiency and streamlining the review process for 3,000+ applications

SKILLS & AWARDS

Computational Tools: Python (pandas, scikit-learn), R (DESeq2, ggplot2, Seurat), MATLAB, Bash, Jupyter
Bioinformatics Tools: FASTQ/FASTA, SAMtools, StringDB, BLAST, IGV
Single-cell & RNA-seq: Seurat, Scanpy, UMAP, featureCounts, GSEA
Web/Other: HTML, Java, React, Git/GitHub
Awards: 1st Place – Innovation in Research: Data Science (Novartis), HackMIT Top Beginner **Project**, National Merit Scholar