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: Modern Computational Biology, Biostatistics, Machine Learning, Algorithms, Linear Algebra

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 and gene set enrichment analysis to inform predictive features

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

- Analyzing nanopore sequencing data to resolve tRNA splicing patterns and detect RNA modifications
- Developed and optimized computational pipelines using tools such as NanoPlot, BWA, and DESeq2 for quality control, alignment, and differential expression analysis
- Created custom documentation and terminal scripts to streamline reproducible analysis

Genetics Medicine Scholar — Eli Lilly — 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 — *Anders Sejr 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

Momentum Design Competition (1st Place) — MIT OME & *Blue Origin* — JAN 2024

- Developed an interactive simulation using HTML, CSS, and JavaScript to study orientation perception in microgravity aboard Blue Origin's New Shepard, while managing a four-person team to ensure compliance with safety standards

Young Scholar's Program — *Rouzbeh Amini Lab (Northeastern University)* — 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 (scikit-learn, pandas), R (ggplot2, DESeq2), MATLAB, Bash

Bioinformatics Tools: FASTQ/FASTA, SAMtools, BLAST, FIJI/ImageJ

Web: HTML, React, Git

Lab Skills: gel electrophoresis, PCR, Gibson assembly, DNA purification, tissue culture, flow cytometry

Awards: 1st Place Momentum Design Competition, HackMIT Top Beginner **Project**, National Merit Scholar