DOMINIQUE DANG

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA MAY 2027

Bachelor of Science: Computer Science & Molecular Biology

Relevant Courses: Biochemistry, Genetics, Cell Biology, Algorithms, Probability & Statistics, Linear Algebra, Fundamentals of Programming

RESEARCH & PROFESSIONAL EXPERIENCE

Oncology Data Science Intern | Novartis Biomedical Research Institute MAY — AUG 2025

- Built a predictive machine learning model in Python and R achieving 85% accuracy in forecasting tumorigenesis outcomes for human cancer cell lines in xenograft mouse models
- Engineered predictive features by integrating differential gene expression analysis (DESeq2) and gene set enrichment analysis (GSEA), identifying 200+ biomarkers that significantly correlated with tumor formation
- 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 | MIT— *Eliezer Calo Lab* JAN. 2025 — PRESENT

- Analyzing nanopore sequencing data to resolve tRNA splicing patterns and detect RNA modifications
- Designed 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 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* DEC. 2024 — FEB. 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* JUNE— 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

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

MIT Museum — *STEM Educator* 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

SKILLS & AWARDS

Programming & Data Science: Python (pandas, scikit-learn), R (ggplot2, Seurat), MATLAB, Bash, Jupyter, Git
Bioinformatics: FASTQ/FASTA, SAMtools, BLAST, IGV, StringDB, Scanpy
Lab Skills: PCR, gel electrophoresis, Gibson assembly, DNA purification, tissue culture, flow cytometry
Awards: 1st Place – Innovation in Research: Data Science (Novartis), HackMIT Top Beginner Project