Rohan Butani

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Education

JOHNS HOPKINS UNIVERSITY Baltimore, MD

B.S. in Computer Science and Chemical & Biomolecular Engineering *Anticipated Graduation May 2028*

- Activities and Societies: Army ROTC, Quiz Bowl, Student Advocates for Low-Income Health

Experience

Johns Hopkins University School of Medicine Baltimore, MD

Research Assistant, Division of Infectious Diseases –Advised by Prof. Tornheim *September 2025 – Present*

- Processing MDR-/XDR-TB clinical databases in R and Python, restructuring relational data into wide- and long-form formats and computing mutual information for feature extraction.
- Developing machine learning pipelines for hazard function estimation of tuberculosis risk.

Johns Hopkins University Baltimore, MD

Research Assistant, Institute for Computational Medicine – Advised by Prof. Bader *September 2025 – Present*

- Analyzing HEK cell protein–protein interaction (PPI) networks using Python and R, mapping HGNC symbols and expanding cross-reactive antibodies into distinct interactions.
- Processing interaction archives containing AlphaFold batch inputs and generating protein complex structure predictions for multi-chain assemblies using the AlphaFold web portal.

University of California, San Diego Remote

Research Assistant, Knight Lab – Advised by Prof. Degregori *June 2025 – Present*

- Collecting and processing microbiome study metadata and genomic-sequence availability using Python, generating reproducibility metrics and publication-ready visualizations (Matplotlib, seaborn).

The Wharton School Institute of AI and Analytics Remote

Student Researcher, Lead and Corresponding Author – Advised by Prof. Bradlow *June 2025 – Present*

- Scraped and cleaned NFL performance and health data with Python (requests, BeautifulSoup, Selenium, Pandas).
- Engineered demographic, travel, and workload features; trained and tuned classification models (scikit-learn, XGBoost, PyTorch (TabNet), TensorFlow) predicting injured reserve placement.
- Accepted to the 2025 IEEE MIT Undergraduate Research and Technology Conference, 2025 IEEE-EMBS International Conference on Biomedical and Health Informatics.

Georgia Institute of Technology School of Mathematics Remote

Student Researcher, Lead and Corresponding Author – Advised by Prof. Goldsztein *May 2024 – June 2025*

- Led development of nine machine learning prediction models for UCL reconstruction in baseball pitchers, achieving novel 79.2% accuracy; visualized feature importance with SHAP and Matplotlib.
- Accepted to present at multiple international conferences; published on IEEE Xplore in *Proceedings of the International Conference on Healthcare Informatics*. Conference travel funded by NSF Student Grant ($3,500).

Technical Projects

GlucaGone July 2025 – Present

- Engineering and deploying an interpretable, interactive machine learning-driven diabetes risk prediction tool using Flask, SHAP, and responsive frontend design, deployed on Render.

No Passage, No Problem – Independent NLP Research May 2025 – Present

- Investigating partial-input ablations for artifact discovery and exploitation in multiple-choice reading comprehension (MC-RC) benchmarks using modern LLMs.
- Manuscript accepted to the *2025 NeurIPS Workshop on LLM Evaluation, 2025 NeurIPS Workshop on Efficient Reasoning*, among others.

Professional Skills

- MATLAB; Python (Pandas, Matplotlib, TensorFlow, PyTorch, scikit-learn); R; LaTeX; Motion Analysis (Cortex, OrthoTrak); Experimental Design; Data Collection; Data Annotation; Ethical Conduct.