

Nikhil Ramlukan

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EDUCATION

Johns Hopkins University – Baltimore, MD

B.S. in Computer Science and Chemical & Biomolecular Engineering | Class of 2029 | GPA: 3.6 | ACT: 36

Relevant Coursework: Dynamical Systems, DSA, Mass & Energy Balance, Linear Algebra, Probability, Statistics

EXPERIENCE

Dash Bio, Weston, MA – Software Engineering Intern

(Jun 2026 – Aug 2026)

- Designed and owned an end-to-end automated QA pipeline, collaborating with the QA, software engineering, and product teams to replace a recurring manual review process
- Implemented the pipeline as scalable CI/CD tooling using JS, Bash, Python, and GitHub Actions
- Cut QA reporting from ~25 hours of manual work to near-instant, currently saving 100+ engineering hours monthly

Harvard Medical School, Blavatnik Institute, Cambridge, MA – Researcher

(Feb 2024 – Present)

- Built stroke-sign screening models: dysarthria detection from speech (MFCC features + MLP, ~39k clips) and facial palsy detection from images (~5,400 images)
- Replaced a MobileNetV2 CNN that dropped from 0.89 to 0.55 AUC on unseen sources with geometric asymmetry features from FaceMesh landmarks and gradient boosting (0.82 AUC, 0.71 cross-corpus)
- Co-authored an article published by the American Association of Neurological Surgeons (Nov 2024)

Johns Hopkins School of Medicine, Baltimore, MD – Researcher

(Nov 2025 - Present)

- Developing a preoperative triage model predicting ICU-level care need after elective craniotomy in the Laboratory of Computational Intensive Care Medicine
- Built the pipeline with 10-fold nested CV across logistic regression, XGBoost, and CatBoost, with bidirectional external validation across Johns Hopkins (n=310) and MIMIC-IV (n=367) cohorts
- Identified 17 ICU-stay variables leaking into the feature set (~70% of SHAP importance); removing them and fixing CV raised PMAP AUROC from 0.73 to 0.77

PROJECTS

BrainSentry – On-Device ML for Passive Screening

(May 2026)

- Built an iOS app that runs both screening models fully on-device from camera and microphone capture with no network dependency
- Deployed the speech model as a 110 KB quantized TFLite artifact, tuning latency and memory for real-time inference
- Presented to the health ministries of Indonesia and South Sudan; secured government support to launch a research study in Indonesia

GreenChain, HackPrinceton Spring 2026 – 3x Track Winner

(Apr 2026)

- Built a multi-agent AI platform that autonomously researches manufacturers and supply routes and evaluates environmental sustainability for SMB supply chains
- Deployed agents across virtual machines for parallel web crawling, RAG, and analysis, using XGBoost to score supply-chain sustainability

TECHNICAL SKILLS

- Programming: Python (Pandas, Scikit-Learn, PyTorch), C/C++, TypeScript, JavaScript, Dart (Flutter), SQL
- Machine Learning: clinical risk modeling, nested cross-validation, calibration, SHAP, feature engineering, RAG
- Developer Tools: Git/GitHub, Docker, Linux, REST APIs, CI/CD, React, Node.js, Firebase, Pinecone

ACTIVITIES & COMMUNITY SERVICE

- Assistant Squash Coach — Johns Hopkins University Club Squash Team
- Volunteer, Weston Council on Aging — provided tech support for over 100 senior citizens