

Fardeen Bablu

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EDUCATION

Vanderbilt University — Nashville, TN May 2026

Bachelor of Science in Computer Science, Mathematics, Public Health

Courses: Data Structures & Algorithms, Software Engineering, Operating Systems, Deep Learning, Linear Algebra

Activities: Head Resident Advisor, Entrepreneurship Society, First Generation VU, Assoc. of Bengali Students

SKILLS

Programming: Python, JavaScript/TypeScript, C/C++, R, SQL

Libraries: PyTorch, TensorFlow, NumPy, Scikit-learn, OpenCV, Matplotlib, React, Node.js, Tailwind CSS

Tools: Figma, Git, Docker, Kubernetes, CMake, AWS (S3, CloudFront), GCP (BigQuery ML, Cloud Run)

EXPERIENCE

Machine Learning Intern Nashville, TN

Vanderbilt University, Department of Computer Science

May 2025 – Present

- Developed independent research tool analyzing 168+ tissue images with over 94% cross-species similarity.
- Built multi-modal framework with 4 approaches and custom loss functions for transfer learning.
- Utilized pipeline benchmarking 3 architectures (U-Net, PSPNet, DeepLab) using 3 metrics (IoU, Dice, Pixel Acc).

Teaching Assistant Nashville, TN

Vanderbilt University, Department of Computer Science

Jan. 2025 – Present

- Led 12 hours/week of office hours for 50+ students, focusing on debugging, OOP, & algorithm design.
- Graded 10+ coding assignments per cycle via GitHub & Autograder; improved student resubmissions by 30%.
- Supported 8 Software Engineering course teams; advised on design patterns, testing, and full-stack development.

Software Engineering Intern Washington, DC

Jenner & Block LLP

June 2024 – Aug. 2024

- Led digital transformation initiative for 50+ attorneys, automating workflows to reduce onboarding costs by 40%.
- Configured Cisco Meraki Access Points across office; improved wireless stability & cut IT tickets by 25%.
- Collaborated with cross-functional teams to integrate 5+ enterprise applications, streamlining operations.

PROJECTS

DormDash - Hyperlocal Campus Delivery Marketplace - React Native, Firebase, Express.js – [GitHub](#) May 2025

- Architected mobile marketplace connecting 31 colleges to 40+ restaurants, enabling student-to-student delivery.
- Engineered geospatial routing algorithms supporting 3 travel modes to calculate dynamic ETAs via Haversine formulas.
- Implemented offline-first sync engine managing 29,000+ LOC to resolve conflicts and ensure data integrity.

Spevents.live - Real-time Photo Wall - React, Three.js, Tailwind CSS, AWS S3 – [Live](#) Jan. 2025

- Built a QR-based, serverless Photo Wall with less than 500ms sync via AWS S3 + CloudFront for low-latency delivery.
- Reduced bundle size by 60% through code-splitting & visual effects with Framer Motion & Three.js.
- Successfully demoed across 4 large Vanderbilt cultural events, with guests contributing 200+ candid photos.

Networks - Analysis in the U.S. - Python, NetworkX, Pandas – [GitHub](#) Nov. 2024

- Analyzed 100K+ providers across 50 states to quantify regional care gaps and identify network bottlenecks.
- Authored 15-page report leveraging network metrics to isolate inefficiencies in healthcare spending and access.
- Mapped provider distribution (2011–2013) via interactive visualizations to expose disparities in specialized care.

QuizLITE - Flashcard Desktop App - C++, SQLite, Qt6, CMake – [GitHub](#) Aug. 2024

- Open-source flashcards app with 3 learning modes as a free, offline Quizlet alternative used by classmates.
- Engineered SQLite backend for handling thousands of flashcard sets with sub-100ms query response times.
- Built cross-platform desktop UI using Qt6, achieving 2x faster performance than similar web-based tools.

AWARDS

Amazon Mission Autonomy Hackathon 2025 - 2nd Place (\$15K Prize) - [Pitch](#) | [Github](#) Nashville, TN

HUSH-MESH, an AWS-powered autonomous maritime defense network with RF-silent drones for routing.

Vanderbilt X Ironsite Hackathon 2025 - 3rd Place (\$2.5K Prize) - [Pitch](#) | [Github](#) Nashville, TN

Built an object permanence model to track blocked objects, boosting accuracy from 12% to 94%.

Google Solutions Challenge 2025 - 1st Place - [Pitch](#) | [Github](#) New York, NY

Gemicast, a real-time outage-risk dashboard + predictive alerts, inspired by recent Tennessee floods.

Accenture Innovation Challenge 2024 - Top 5 National Finalist - [Pitch](#) Washington, DC

NPForward, an AR/VR “Pokémon Go” style park collectibles + rewards to boost Gen-Z engagement.