Filiz Karabulut

Nashville, TN | filizkarabulutf@gmail.com | linkedin.com/in/filizkarabulut | github.com/filizkarabulut

Computer Science | AI/ML & Full-Stack Software Engineering

AI Research Intern with experience in full-stack development, cloud infrastructure, and generative AI. Contributing to Amplify, an open-source AI platform serving 10,000+ users and 40+ institutions. Co-founder of SpIQ, winner of 1st Place at HackMT26.

EDUCATION

Vanderbilt University, School of Engineering — Nashville, TN
B.S. in Computer Science & Applied Mathematics; Minor in Engineering Management | GPA: 3.96/4.00 — *Expected May 2029*

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, Java, C++, SQL, R, HTML/CSS
Cloud & AI: AWS (Bedrock AgentCore, Nova Sonic, Polly, DynamoDB, S3, API Gateway), OpenAI (Whisper, GPT-4o mini Audio)
Frameworks & Data: Flask, MediaPipe, OpenCV, NumPy, pandas, TinyDB, Microsoft SQL Server

PROFESSIONAL EXPERIENCE

AI Research Intern, AMPLIFY GenAI Innovation Center — May 2026 – Present
Open-source GenAI platform: 10,000+ Vanderbilt users, 40+ institutions | 12-person dev team — *Nashville, TN*

- Enabled sandboxed AI code execution by leading Amplify's migration from the OpenAI Assistants API to AWS Bedrock AgentCore: built the multi-round tool loop, DynamoDB session management, S3 file persistence, and session renewal, and provisioned the IAM, SSM, and DynamoDB infrastructure behind it.
- Developing a real-time AI collaboration agent that combines live speech, visual context, and OpenCV-based whiteboard change detection to support context-aware interactions with configurable AI agents.
- Rebuilt the AI Actions and Action Sets interface in Amplify's frontend, a feature in wide use across the platform for connecting assistants to external APIs.
- Enhanced a multi-tenant licensing plugin by redesigning the interface and enabling users to define custom standards for automated license review, redlining, and Word document generation.

IT Systems & Operations Assistant, Vanderbilt University IT — Jan 2026 – May 2026

- Automated timesheet, network-device, and classroom-record reconciliation in Python (pandas) and SQL, replacing manual CSV review for operations reporting.
- Integrated TDX ticketing with Crestron Fusion monitoring for campus-wide AV visibility, and resolved 50+ classroom AV, network, and control-system issues.

PROJECTS

SpIQ | *Co-Founder, team of 6* | github.com/devmutfak/devmutfak-repo — Jan 2026
1st Place & Hacker's Choice, HackMT 2026

- Founded an AI communication coach that gives real-time feedback on interview and presentation delivery from webcam video.
- Built the computer-vision backend (Python, MediaPipe, OpenCV, Flask) that tracks 9 behavioral signals (eye contact, gestures, blink rate, head stability, body sway etc.) over 15s windows as JSON scores.

Ask VALIANT | *Sole developer* | github.com/filizkarabulut/ask-valiant — Nov 2025 – May 2026

- Built a multi-agent research assistant for Vanderbilt's VALIANT lab that routes industry questions through router, research, and knowledge agents to match them with 134 AI faculty and their 6K+ PubMed papers.
- Shipped the full stack in Flask: bcrypt session auth, TinyDB persistence, and an admin dashboard that flags failures across four severity levels (e.g., no faculty match, missing citation) and tracks satisfaction KPIs.

LEADERSHIP EXPERIENCE

Co-President, VandyHacks — Feb 2026 – Present

- Lead Vanderbilt's student-run hackathon and a 15-person executive board, coordinating finance, sponsorship, vendors, and operations for 200+ attendees.
- Expanded programming in first term as co-president: hosted a Y Combinator event and lined up with a hackathon in partnership with Oracle and Hackathons International.

Social Chair, Vanderbilt Women in Science & Engineering (VU-WiSE) — Sep 2026 – Present

- Plan social and community events for VU-WiSE's network of women in science, engineering, and mathematics (400+ members).