

Puneet Bajaj

Atlanta, GA | 123456789 | puneet.internships@gmail.com

puneetbajaj.com/ | [linkedin.com/in/puneetkumarbajaj/](https://www.linkedin.com/in/puneetkumarbajaj/) | github.com/puneetkumarbajaj

EDUCATION

B.S. in Computer Science – Magna Cum Laude (3.85 GPA)

Graduated May 2024

Georgia State University - Atlanta, GA

3x President's List and 4x Dean's List honored. Awarded as STEM Scholar across 5 campuses.

AWS Certified Solutions Architect - Associate, HashiCorp Certified Terraform Associate

WORK EXPERIENCE

Lead Research Assistant

September 2024 - Present

CMII at Georgia State University – Atlanta, GA

- Led a team of 6 to develop digital-humans, achieving human-like communication with real-time emotion responsiveness.
- Optimized ML algorithms in Python, enhancing response speed by 30% for real-time, emotion-based interactions.
- Conducting Department of Defense funded research at CHAI Center (\$10M Grant), advancing digital-human capabilities.
- Built computer vision and voice analysis models in Python & C++ enabling responses to user emotions with 500ms latency.

Research Assistant

February 2024 - May-2024

AMAI Lab at Georgia State University – Atlanta, GA

- Developed a Flutter-based emotion detection for mobile devices, completing the project 4x faster than the expected timeline
- Utilized TensorFlow Lite to develop mobile-optimized machine learning models, improving computational efficiency by 25%.
- Collaborated with a cross-functional team of 4 people to rapidly deploy ML solutions on mobile and embedded platforms.

Lead Makerspace Assistant

August 2022 - May 2024

EXLAB at Georgia State University – Atlanta, GA

- Managed and Ameliorated 3D printers, laser cutters, VR systems, motion sims, and CNC, ensuring 100% operational uptime.
 - Conducted 50+ training sessions on advanced lab equipment for 100s of lab visitors to assist users in achieving project goals.
 - Led a team of 12, across two campus maker spaces and fostered collaboration and efficient resource use.
 - Spearheaded a project involving improvements to 3D printing cycle speed by up to 4 times, significantly boosting productivity.
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PROJECTS

CiperLink <https://ciperlink.puneetbajaj.com/>

February 2024 - April 2024

- Engineered Zero-Knowledge Proof integration model, reducing phishing risks by over 90%, enhancing user security.
- Enhanced the user interface using React and Next.js, focusing on efficiency and rapid scalability for 1000s of users.
- Implemented NodeJS backend on Google Cloud, improving operational efficiency and ensuring reliable performance.
- Led a 3-staged cryptographic ceremony to establish a secure, trusted foundation for robust user authentication processes.

CareerSwipe <https://careerswipe.puneetbajaj.com/>

January 2024 - April 2024

- Architected CareerSwipe, an AI recruiting platform optimizing recruiter-student matching based on detailed preferences.
- Gained recognition from University's Associate Dean of CS; discussions underway to integrate with University Career Services.
- Gained over 50+ students as users obtaining detailed resume feedback and job matching within a week of initial alpha launch.
- Directed a team of five students in executing a software engineering capstone project, guiding all phases of development.
- Built a responsive user interface with Next.js, supported by a Python based Django RESTful API for efficient data handling.
- Deployed the platform on AWS, ensuring 99.9% uptime with load balancing and global CDN.

Melos (Candace) <https://melos.puneetbajaj.com/>

July 2024 - Present

- Engineered Melos, utilizing Large Language Models to revolutionize music discovery tailored to mutable user mood insights.
 - Crafted in Swift, integrating Firebase, Vertex AI, and OAuth2 for secure authentication and personalized playlist generation.
 - Directed alpha testing with 5 users, refining UI and functionality through detailed feedback and a robust CI/CD pipeline.
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SKILLS

Programming Languages: TypeScript, JavaScript, Python, Java, Dart, Swift, HTML, CSS

Cloud & DevOps: AWS (EC2, S3, Lambda, RDS, ECS, SQS, Eventbridge), Azure, Terraform, Docker, Firebase, Google Cloud Platform

Technologies & Tools: React, Next.js, Node.js, Flutter, Express.js, Django, Git, Jira, Tailwind-CSS, SEO, REST APIs, GraphQL, PostgreSQL, MSSQL, MySQL, PHP, Spring-Boot, Linux, Angular, Svelte Kit, SwiftUI, Redis, Ansible, Splunk, Cassandra, Git-Ops, DynamoDB, Scripting

Other: Machine Learning (PyTorch, TensorFlow Lite), Computer Vision, Linux, Blender, UE5.4, CI/CD