

Shayer Irtiza Khan

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EDUCATION

George Mason University

Fairfax, VA

Bachelor of Science, Computer Science — GPA: 3.93/4.0

Expected Jun 2028

Relevant Coursework: Object-Oriented Programming, Low-Level Programming, Data Structures and Algorithms, Database Concepts, Statistics I, Computer Systems, Software Testing and Maintenance, Computer Networking

Honors: Outstanding Cambridge Learners Award (National Rank #1, Mathematics), Mason Distinction Scholarship

TECHNICAL SKILLS

Languages: JavaScript/TypeScript, Python, C, HTML/CSS, Java, SQL

Frameworks/Libraries: React, Node.js, Next.js, React Native, Three.js, Flask, FastAPI, Django, PyTorch

Developer Tools: PyTest, Postman, JUnit, Codex, Claude Code, PostgreSQL, AWS, Git, REST APIs, Docker, GCP

EXPERIENCE

Undergraduate Research Assistant

January 2026 - Present

Mason Experimental Geometry Lab

Fairfax, VA

- Investigated failure modes in deterministic Schelling segregation simulations, validating that local-search behavior could terminate at suboptimal configurations; implemented probabilistic path-exploration logic in Python to search a broader state space for globally optimal outcomes.
- Implemented a probabilistic state-space search algorithm with hash-based memoization, eliminating repeated state evaluations and reducing runtime from approximately 30 to five minutes.

Software Testing Researcher

February 2025 - December 2025

George Mason University

Fairfax, VA

- Investigated 500+ open-source Java repositories across Windows, Ubuntu, and macOS, classifying OS-dependent deterministic test failures into six root-cause categories, and guiding cross-platform reliability improvements.
- Designed automated cross-OS test strategies using Python and GitHub Actions, scaling quality coverage to 1,000+ weekly test runs and reducing mean debugging time by 70% through systematic failure triage and reporting.

Software Engineer Intern

June 2025 - August 2025

Kite Games Studio

Dhaka, Bangladesh

- Built an internal 2D-to-3D asset conversion tool using Three.js and WebGL, implementing heightmap-based mesh displacement to programmatically translate pixel brightness into 3D geometry, outputting production-ready GLB.
- Implemented and deployed a Diff Checker application using Next.js and TypeScript, reducing QA turnaround time by 40% through automation, and cutting deployment errors by 30% with a robust CI/CD pipeline.
- Consolidated duplicated application logic into reusable modules, reducing codebase by 50% and simplifying future feature development; containerized and deployed production services with Docker alongside senior engineers.

PROJECTS

SpellDuel | [Live Demo](#) | TypeScript, Python, WebSockets, React, MediaPipe, Keras, PyTorch, Docker, Oracle Cloud

- Applied distributed systems and computer networking principles to architect a scalable, deterministic 60 Hz server-authoritative multiplayer simulation; implemented frame-addressed inputs, client prediction, reconciliation, and rate-limited rollback to maintain responsiveness under network latency while bounding server CPU usage.
- Trained and optimized a lightweight ASL gesture-recognition model using MediaPipe and Keras, reducing inference latency from approximately 2 seconds to 10 milliseconds while maintaining 95% accuracy
- Reduced client-server bandwidth through bit-mask input encoding and designed latency compensation for jitter and delayed packets; deployed the Dockerized Colyseus server on Oracle Cloud in an Ubuntu Unix/Linux environment.

Outfitted.AI | [GitHub](#) | TypeScript, Express, MongoDB, React Native, NativeWind/Tailwind, Expo, Flask

- Developed a responsive, cross-platform AI outfit mobile application in React Native, winning “Best Use of Gemini” at UVA’s HooHacks 2025 (700+ participants).
- Built a full-stack generative AI pipeline with mobile frontend + Express/Flask backend for real-time inference, handling concurrent uploads and maintaining sub-5s latency under load.

LEADERSHIP

GitHub Campus Expert & PatriotHacks Lead

January 2025 - Present

- Organized and led PatriotHacks (500+ participants, 10+ technical workshops), raising over \$35,000 partnering with sponsors and mentors to drive open-source collaboration and help students ship real-world projects.