Mohamed Shaik

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EDUCATION

George Mason University *Fairfax, VA*
Bachelor's in Computer Science *Expected May 2025*

- GPA: **3.93/4.0** — *Dean's List*
- Coursework: Software Engineering, Artificial Intelligence, Operating Systems, Object-Oriented Programming, Data Structures & Algorithms, Database Concepts, Computer Vision, Data Mining, Low Level Programming, Embedded Systems

TECHNICAL SKILLS

Programming Languages: Python, Java, C/C++, C#, JavaScript, SQL, R, HTML/CSS
Frameworks: React, Flask, Next.js, Node.js, JUnit, PyTorch, NumPy, OpenCV, Pandas, TensorFlow
Developer Tools: Git, Docker, Linux, AWS, Azure, Azure Kinect SDK

EXPERIENCE

Computer Vision Research Assistant *Fairfax, VA*
Department of Computer Science *September 2024 – Present*

- Optimized volumetric data processing by compressing 100GB of depth sensor data into 9GB Pickle binary format, achieving 91% reduction in storage requirements through implementation of custom compression algorithms
- Established multi-sensor volumetric capture pipeline using 4 Azure Kinect cameras by configuring RabbitMQ message broker and custom device repository, enabling real-time 360° 3D cloud point reconstruction at 30fps

Software Engineer *Remote*
Purgeon - LGTM LLC *September 2024 – Present*

- Engineered "Purgeon," an AI-powered disk optimization desktop application using Svelte, Tauri, Python, and Rust, reducing digital clutter by 30% through intelligent file categorization and automated cleanup suggestions
- Collaborated on developing core AI features for smart file categorization, batch renaming with custom rules, and real-time file previews with 80% accuracy in test environments

Undergraduate Teaching Assistant (5x) *Fairfax, VA*
College of Engineering and Computing *January 2023 – December 2025*

- Mentored 600+ students across 5 semesters in core programming languages (C, Java, Python), resulting in an average 15% improvement in assignment completion rates through one-on-one tutoring and lab assistance
- Created resources and strategies that enhanced student comprehension and retention of core programming concepts
- Led 20+ exam review sessions, distributing supplementary study guides to more than 200 students, with 50+ students reporting improved understanding of complex topics such as Linked Lists, BFS, DFS, and recursion

PROJECTS

WALL-E | *React, JavaScript, Python, REST API, OpenAI (GPT-4), Ollama, OpenCV, PyQT5*
PatriotHacks 2024: Triple Winner (Patriot Favorite, Most Likely to be a Startup, Best Cyberpunk Theme)

- Engineered an AI-powered file management system achieving 95% accuracy in content classification, integrating GPT-4 API for intelligent metadata extraction and automated tagging, leading to 30% reduction in digital clutter
- Developed embedded system using Arduino and Raspberry Pi that achieved 90% accuracy in waste detection and classification under varying lighting conditions, earning recognition for innovative environmental solution

Peekabot | *Python, C++, Raspberry Pi, Arduino, AWS, Mediapipe*
HackOverflow 2024: Best Robot Hack Winner

- Architected real-time child monitoring system processing 30 frames per second with 50ms latency using optimized computer vision algorithms, distinguishing project among 100+ submissions
- Implemented end-to-end encrypted AWS pipeline handling 1TB+ of video data monthly with 99.9% uptime and <100ms alert delivery, addressing critical safety concerns

Environmental Safety Navigation | *Java, OpenCV, TensorFlow*
PatriotHacks 2023: Best AI-Powered Hack Winner

- Developed vSLAM-based navigation system achieving 95% accuracy in obstacle detection and 10cm precision in distance estimation, winning against 50+ competing AI solutions
- Implemented real-time image processing pipeline handling 60fps with custom CNN architecture, achieving 40ms inference time on mobile devices, making solution practical for real-world use