

# Mahad Aziz

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## Technical Skills

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- **Languages:** TypeScript, JavaScript, Python, Java, SQL, HTML/CSS, Haskell
- **Frontend:** React, Next.js, D3.js, Tailwind CSS, Adobe CEP/ExtendScript
- **Backend:** Node.js, Express.js, Flask, GraphQL, REST APIs, WebSockets
- **Databases:** PostgreSQL, MongoDB, MySQL
- **Infrastructure:** Docker, Kubernetes, Terraform, AWS, Azure, Jenkins, GitHub Actions
- **Other:** CI/CD, OAuth/JWT (NextAuth.js), Git

## Work Experience

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### Junior Software Engineer

May 2024 – Present

*Evertz Microsystems*

- Built the Adobe Media Suite from scratch – a React + CEP extension running inside Adobe Premiere, now deployed at multiple broadcast customer sites; delivered sequence/clip import via Adobe Media Encoder with .epr preset workflows, metamarks-to-clip generation, and full clip/sequence management
- Maintain and contributed extensively to a 5-service broadcast multiviewer design tool (React frontend, server, hardware driver, web UI, WAMP messaging), currently rolling out to customers; implemented runtime display-count resizing, full-window widget geometry preserving video layouts, and support for 14 new device layout configurations
- Drove cross-stack reliability work across frontend, server, and the WAMP messaging layer: resolved race conditions in concurrent layout updates, eliminated orphaned canvas state on system initialization, and refactored live-update notification handling
- Optimized device discovery in the management UI to filter to relevant device types instead of fetching the full device list, eliminating ~90% of irrelevant entries from the response on large customer deployments and cutting load time on the clients grid

### Student Design Engineer – Software

May 2022 – Apr 2024

*Evertz Microsystems*

- Built a drag-and-drop file upload feature with RESTful endpoints handling secure transfer for production media workflows
- Triageed and resolved 150+ feature requests and bugs across React, TypeScript, and Flask codebases over a two-year co-op rotation
- Authored technical documentation and mentored two interns through code reviews and pairing sessions, accelerating their ramp onto the codebase

## Projects

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### Collabspace

*Demo Code*

- Built a real-time collaborative document editor with Next.js 15, React 19, Tiptap v3, and Yjs CRDT in TypeScript strict mode, gated by a custom Node.js WebSocket sync server using NextAuth v5 JWTs and per-document ACLs
- Persisted Yjs state to Postgres on a 10s idle debounce to decouple DB writes from keystroke rate; implemented live cursors and presence via Yjs awareness and Tiptap CollaborationCaret with deterministic userId-to-HSL coloring and multi-tab dedup
- Provisioned AWS infrastructure with Terraform (VPC, ECR, EC2/SSM, IAM, Route53) and a 3-stage GitHub Actions pipeline using OIDC for keyless deploys, shipping 2 containers behind a Caddy TLS/WebSocket proxy

### Journey AI

*Demo Code*

- Built a full-stack AI writing assistant with Next.js, Flask, and MongoDB, iterating on UX through user testing
- Integrated Falcon-7B via Hugging Face Inference API for context-aware suggestions, tuning prompts through systematic evaluation
- Built dynamic D3.js visualizations to transform user-uploaded datasets into interactive graphs
- Implemented NextAuth.js with OAuth providers for secure session management

## Education

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McMaster University, Hamilton, ON

Apr 2024

Honors Bachelor of Applied Science, Computer Science

GPA: 3.9/4.0