Ahnaf An Nafee

Software Engineer | AI Researcher | DevOps & Cloud Infrastructure

ahnafnafee@gmail.com | 540-252-8738 | United States
linkedin.com/in/ahnafnafee | github.com/ahnafnafee | ahnafnafee.dev | Google Scholar

SUMMARY

Computer Science PhD candidate and full-stack engineer with 4+ years of industry experience spanning distributed systems, cloud-native infrastructure, and applied AI/ML research. Proven track record delivering production-grade platforms at scale: reduced infrastructure cost by 80%, automated release pipelines cutting manual effort by 85%, and eliminated certificate-related downtime by 100%. Former CTO leading cross-functional engineering teams; now advancing research at the intersection of generative AI, 3D computer graphics, and human–computer interaction. Seeking software engineering, machine learning, and research-engineering roles where systems thinking meets scientific rigor.

TECHNICAL SKILLS

Languages: Python, Go, Java, C++, TypeScript, JavaScript, SQL, GLSL, Bash
AI / ML: PyTorch, TensorFlow, Generative AI, Deep Learning, Computer Vision, Diffusion Models, LLMs, Reinforcement Learning, MLOps
Graphics & XR: 3D Computer Graphics, Real-Time Rendering, Shader Programming, Unity, Unreal Engine, WebGL, Procedural Generation
Cloud & DevOps: AWS, Kubernetes, OpenShift, Docker, Terraform, CI/CD, GitHub Actions, Jenkins, Gradle, Maven, Helm, Observability
Backend & Systems: Distributed Systems, Microservices, REST, gRPC, WebSockets, OAuth, RBAC, System Design, High Availability
Frontend: React, Node.js, Next.js, Redux, HTML5, CSS3
Methods: Agile, Scrum, Test-Driven Development, Code Review, Technical Leadership, Cross-Functional Collaboration
Languages (Spoken): English (Full Professional), Bangla (Native)

EXPERIENCE

Graduate Teaching Assistant *Aug 2025 – Present*
George Mason University — DCXR Lab *Fairfax, VA*

- Mentor 60+ graduate and undergraduate students in algorithms, systems, and applied machine learning, driving measurable improvements in lab completion and conceptual mastery.
- Design coursework, lab exercises, and evaluation rubrics aligned with modern software engineering best practices.

DevOps Engineer *Feb 2023 – Aug 2025*
Paychex *Rochester, NY*

- Architected and led a cross-team standardization of Kubernetes/OpenShift deployment dictionaries across 10+ service teams, eliminating configuration conflicts and accelerating developer velocity.
- Designed and rolled out Role-Based Access Control (RBAC) policies in OpenShift in partnership with security and infrastructure teams, hardening the platform against privilege-escalation risks.
- Automated end-to-end TLS certificate lifecycle management, eliminating manual renewals and reducing certificate-expiration-related downtime by **100%**.
- Built a Gradle plugin for container image certification that streamlined CI/CD workflows, reduced build-pipeline congestion, and lowered operational expenses by **10% annually**.
- Championed infrastructure-as-code and observability best practices; partnered with SREs to improve deployment reliability and mean time to recovery (MTTR).

Chief Technology Officer *Jun 2022 – Feb 2023*
Dynasty 11 Studios *Wayne, PA*

- Owned end-to-end technical strategy, architecture, and execution as CTO; led engineering across backend, frontend, and cloud teams shipping a consumer-facing matchmaking platform.
- Spearheaded migration of monolithic backend to a microservices architecture on AWS, cutting application load and cloud spend by **80%** through right-sizing, autoscaling, and serverless adoption.

- Introduced CI/CD with GitHub Actions and Maven, automating builds, tests, and deployments; reduced manual release effort by **85%** and eliminated deploy-day toil.
- Recruited, mentored, and led multiple student engineering pods through full microservice design, implementation, and production rollout.
- Drove weekly stakeholder syncs, aligning product, design, and engineering on roadmap, scope, and delivery milestones.

Software Engineer *Sep 2021 – Jun 2022*
Dynasty 11 Studios *Wayne, PA*

- Engineered a real-time chat subsystem using STOMP over WebSockets in Java, supporting thousands of concurrent users with low-latency delivery.
- Integrated 20+ REST endpoints across third-party and OAuth-based identity providers, enabling secure, scalable authentication and data exchange.
- Optimized client-side state management with Redux, cutting chat-service performance bottlenecks by **80%**.
- Designed data pipelines and APIs powering the matchmaking recommendation engine serving thousands of active users.

Teaching Assistant *Sep 2021 – Jun 2022*
Drexel University — College of Computing & Informatics *Philadelphia, PA*

- Facilitated weekly labs and mentored students in systems engineering, programming fundamentals, and technical project management.
- Developed hands-on demonstrations translating abstract computer-science concepts into practical, assessable skills.

Technical Programmer *Mar 2021 – Sep 2021*
PHL Collective *Philadelphia, PA*

- Shipped gameplay systems and parameterized shaders for *DC's Justice League: Cosmic Chaos* (multi-platform console/PC release).
- Built modular game-manager scripts that streamlined designer workflows and accelerated feature iteration.
- Partnered with technical artists to create customizable, performance-tuned shaders optimized for runtime rendering.
- Executed integration and stress testing via Mantis, delivering actionable, developer-ready bug reports.

EDUCATION

Ph.D. in Computer Science
George Mason University — DCXR Lab *Fairfax, VA*

- Research focus: generative AI for 3D content creation, machine-learning-driven graphics pipelines (UV mapping, non-photorealistic rendering), and human–computer interaction in immersive XR environments.

B.S. in Computer Science
Drexel University *Philadelphia, PA*

- Honors: Dean's List; Founder's Scholarship.
- Relevant coursework: Algorithms, Operating Systems, Distributed Computing, Computer Graphics, Machine Learning, Software Engineering.

RESEARCH & SELECTED PROJECTS

- **AI-Driven 3D Content Generation** — Researching generative models (diffusion, neural fields) for automated, controllable 3D asset creation in production-grade graphics pipelines.
- **ML for Graphics Pipelines** — Exploring learning-based approaches to UV mapping, stylization, and non-photorealistic rendering (NPR) for real-time applications.
- **Portfolio & Publications** — Additional projects, technical artwork, and game development work available at ahnafnafee.dev/portfolio.