

Esslam Ashour

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EDUCATION

The University of Chicago

Bachelor of Arts in Computer Science, Minor in Linguistics

Chicago, IL

Expected June 2027

EXPERIENCE

Amazon Web Services (AWS)

Seattle, WA

Software Development Engineer Intern

June 2026 – September 2026

- Built a CDK-deployable CloudFormation drift investigator in Python and TypeScript, correlating resource diffs with CloudTrail events to identify responsible principals, API calls, and timestamps.
- Orchestrated root-cause workflows with AWS Step Functions, Bedrock, and Strands, completing 93% of evaluated drift investigations in under 90 seconds.
- Built an automated evaluation suite for agent tool selection, execution trajectory, coherence, and correctness using LLM-as-a-judge scoring, achieving a 97.5% overall score.
- Generated evidence-backed CloudFormation change-set proposals and SNS reports; validated CloudTrail attribution and enforced a propose-only IAM boundary to prevent autonomous changes.

Software Development Engineer Intern

June 2025 – August 2025

- Implemented cross-region inference in AWS Amplify AI Kit across 21 AWS regions, increasing supported Bedrock model-region combinations from 54 to 138 for Claude, Llama, and Mistral.
- Built a Lambda-backed CDK construct that resolved model ARNs and inference profile IDs at deployment time, standardizing configuration across 33 inference profiles with least-privilege IAM.
- Designed a schema-versioned model registry separating Bedrock metadata from CDK logic, allowing additional models and regions without changes to construct code and validating behavior with automated tests.

UChicago Computer Science Instructional Laboratory (CSIL)

Chicago, IL

Software Developer

March 2025 – Present

- Lead a team of 5 developers, reviewing and approving pull requests and standardizing testing, development workflows, and backend API conventions across 5 internal services.
- Built shared authentication for alumni and tutor applications using LDAP identity resolution, JWT sessions, and role-based access control.
- Automated quarterly shift scheduling through backend APIs, saving hours of manual scheduling work per quarter.

Alleo.ai

Houston, TX

Software Developer Intern

June 2024 – August 2024

- Reduced p95 event-scheduling API latency by 34% through MongoDB index optimization, query batching, and compiled LINQ queries with ASP.NET Core and Entity Framework Core.
- Built a self-service troubleshooting wizard with React Hook Form and dynamic validation, contributing to a 56% reduction in support tickets over 3 months.

PROJECTS

hgrep – Regex Engine | *Haskell, Parsing, Finite Automata*

[Source](#)

- Built a grep-like CLI and regex parser supporting grouping, alternation, quantifiers, character classes, anchors, and escape sequences.
- Compiled regex abstract syntax trees into ϵ -NFAs using Thompson's construction; implemented set-based NFA simulation with epsilon closure to avoid recursive backtracking.

Unix Shell | *C, POSIX, Linux*

- Built an interactive and batch Unix shell with command parsing, built-ins, redirection, and process execution using `fork`, `execvp`, and `waitpid`.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C, C#, Haskell, SQL

Infrastructure: AWS (CDK, CloudFormation, Lambda, Step Functions, Bedrock, IAM), Docker, Git, Linux

Frameworks & Databases: Strands SDK, ASP.NET Core, EF Core, Node.js, React, PostgreSQL, MongoDB