

MAHMOUD KHAFAGY

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SUMMARY

Software Engineer with 3+ years building production backend systems and applied AI product features across **Python, .NET, Swift, SQL, AWS, and PyTorch**. Built and shipped an iOS **LLM Copilot** that turns natural-language and OCR schedule input into **JSON-schema-validated reminder actions** with App Attest, quota metering, and telemetry guardrails.

TECHNICAL SKILLS

Languages:	Python, C#, Swift, SQL, JavaScript/TypeScript
Backend/APIs:	.NET Core, FastAPI, Flask, SQLAlchemy, Pydantic, REST APIs
AI/LLM:	PyTorch, Structured outputs, JSON Schema validation, tool/function calling, prompt routing/versioning, retries/fallbacks, ambiguity shadow policy, App Attest, signed transaction verification
Data/Cloud:	SQL Server, PostgreSQL, DynamoDB, Pandas, ETL, query optimization, AWS Lambda, API Gateway, CloudWatch, ECR, S3
Mobile/Tools:	SwiftUI, CloudKit, Vision OCR, StoreKit 2, Git, Jira, Confluence

RELEVANT EXPERIENCE

Naval Air Warfare Center

Software Engineer

China Lake, CA

March 2023 - October 2025

- Built and maintained **.NET Core + Vue.js + SQL Server** microservices that tracked naval resources for budgeting and operational reporting.
- Reduced average API response time by approximately **20%** by tuning backend queries and rebalancing workload execution.
- Improved **SQL Server** query performance by **15–20%** through schema refinements, stored procedure optimization, and migration from legacy **Toad** workflows.

Seminaut Inc.

Software Engineer

Austin, TX

April 2022 - March 2023

- Developed scalable web features with **Python, React.js, Flask**, and **SQLAlchemy**, improving engagement and reducing page load times.
- Designed a regional assignment engine using **PostgreSQL** and a **greedy algorithm** to optimize competition structure and personalized recommendations.
- Analyzed large-scale user and platform data with **Python** and **Pandas**, building leaderboards and retention insights for product decisions.

PERSONAL PROJECTS

True Reminder (iOS + LLM Copilot)

TestFlight (beta)

Swift/SwiftUI, CloudKit, Vision OCR, StoreKit 2, FastAPI, PyTorch, AWS Lambda, API Gateway, DynamoDB, CloudWatch

- Built and shipped an iOS reminders/alarms app with shared CloudKit “**Spaces**” collaboration, offline-first caching, optimistic merges, and repeat/snooze/pre-alert workflows.
- Shipped an **LLM Planner Copilot** that transforms natural-language and OCR schedule input into **JSON-schema-validated reminder/alarm actions** with retries/fallbacks, time patching, and PyTorch-based category routing.
- Deployed the Copilot service as **FastAPI** on **AWS Lambda** behind **API Gateway** with correlation IDs, structured logs, App Attest, and signed-transaction verification.
- Implemented ambiguity **shadow-mode policy** (clear vs ambiguous date/target) and a **PyTorch** category-classification prototype with suggest/block telemetry, plus subscription-aware **DynamoDB quotas** and CloudWatch latency metrics (p50/p95).

EDUCATION

Georgia Institute of Technology

Master of Science in Computer Science, Specialization in Artificial Intelligence

Atlanta, GA

Expected May 2027

California State University, Fullerton

Bachelor of Science in Computer Science

Fullerton, CA

December 2022