

Ahmed Tarek (aka Tokyo)

Senior Software Engineer

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Summary

Senior software engineer with over 7 years of industry experience, including 4 years in leadership positions, preceded by academic research. I specialize in fullstack architecture and development using React, Node.js, and Python. I excel at building complex systems across various domains, including Social Networking, Financial Technology, and Digital Health, utilizing advanced techniques in Graph Databases, Recommendation Systems, Machine Learning and Generative AI.

Work Experience

CTO **Apr 2022 – Present**
Plural.com **Palo Alto, CA**

- Set the company's technical roadmap:
 - Partnered with Product to create a corporate-grade development pipeline, from ideation to launch, ensuring clarity, timely delivery, and smooth rollouts.
 - Architected and led the development of a React/React Native design library, accelerating rollouts by 40%, unifying UI/UX and boosting code reusability.
 - Introduced Storybook and Chromatic to align Product, Design, and Engineering with 1:1 mapping between products specs, design files, and code.
 - Introduced end-to-end tests with Cypress and Detox, eliminating bugs in critical user journeys.
 - Introduced enterprise-grade DevOps infrastructure:
 - Led migration from AWS Elastic Beanstalk to EKS (Elastic Kubernetes Service) with Infrastructure as Code (IaC) via CloudFormation, achieving 99% uptime.
 - Automated releases via CI/CD (Continuous Integration & Deployment) pipelines integrated with git flows and EKS, reducing push-to-deploy time by 25%.
 - Introduced secure access management with GitHub SSO and Vault, ensuring full oversight of roles, secrets, and deployments.
 - Cut CI/CD costs by 90% by migrating CircleCI to GitHub Actions and integrating self hosted UbiCloud runners, automated with Agentic AI.
 - Migrated all environments to utilize ARM architecture processors on AWS Graviton reserved instances, reducing infrastructure costs by 44%.
 - Built a real-time event messaging system using GraphQL subscriptions, standardizing real-time features and reducing delivery unreliability to <0.2%.
 - Implemented Mixpanel-based analytics, yielding key user journey insights and contributing to a 15% increase in job listings.
 - Added multi-currency international payments and payouts using Stripe Custom, with robust test and webhook coverage.
 - Introduced fraud detection with Neo4J, APOC, and Stripe, cutting disputes by 80%, and automated dispute handling reducing admin time by 30%.
 - Led migration from CreateReactApp to Next.js 20% faster with GenAI, boosting load speed by 30%, and SEO, and reducing code duplication by 10%.
 - Introduced GraphQL Relay Hooks with React's Suspense API moving 40% of the queries to the server optimizing page load speed by 20%.
- Drove the company's AI strategy:
 - Overlaid the development of a self-improving recommendations system for skill and job titles, integrating traditional algorithms, machine learning, and generative AI. The AI component autonomously cross-references new inputs with existing data to validate and integrate it, with an optional human-in-the-loop override for oversight, achieving a 95% reduction in job title duplicates and spelling variations, and eliminated over 99% of invalid job titles:
 - Researched top ML/AI papers in the HR field and developed a novel approach to job title contextualization, boosting competitive edge.
 - Built multiple prototypes based on the ESCO dataset, utilizing BERT, RoBERTa, and neural networks to create scalable, AI-driven solutions.
 - Used ML classification algorithms to refine 33K job titles to 11K, minimizing noise and balancing data for model training and GenAI context.
 - Implemented a system of AI Agents to clean and enrich the dataset. Used prompt engineering and tool calls to generate synthetic content, such as deducing job-specific details (e.g., remote work capability); resulting in a robust, scalable dataset that met current needs and laid the groundwork for future AI-driven solutions. Inventory management automation eliminated the need for an extra department of technical clerks.
 - Introduced EVAs for AI agents, reducing LLM hallucinations by 90% and ensuring adherence to ethical guidelines and compliance standards.
 - Replaced traditional text search with AI-powered natural language search, boosting search-to-click (30%), daily searches (30%), and hires (20%).
 - Built smart lead generation with simulated LLM search and personalized invitations, achieving 14% conversion and 250% daily sign-up growth.
 - Boosted engineering team's development speed by 20% while maintaining high-quality standards by introducing AI tools, e.g. Copilot and Cursor.
- Scaled the engineering team from 3 to 8 members across frontend, backend, and DevOps:
 - Collaborated with HR to structure and optimize the engineering hiring pipeline; and trained a team member to independently lead technical interviews.
 - Designed and led quarterly performance reviews, aligning individual growth paths with strategic company goals.
 - Mentored 7 engineers (5 frontend, 2 backend) into proficient fullstack developers, fostering a culture of continuous learning and skill expansion.
 - Cut onboarding from 8 to 2 days (with day-one deployments) via structured knowledge transfer, code documentation, and cross-team collaboration.
 - Served as the CEO's technical right hand, translating his high-level vision into actionable engineering roadmaps and priorities.
- Overlaid the evolution from MVP to a mature, scalable multi-product ecosystem:
 - Directed the company through an angel round and pre-seed funding, securing financial resources for the next phase of growth.
 - Built and managed a budgeting model for the engineering department, enabling swift cost-cutting decisions and reducing engineering costs by 34%.
 - Led the implementation of the OKR framework, driving focus to key initiatives, and enhancing transparency with leadership and investors.
- Led cross-functional teams across Engineering, Product, and Design, collaborating with key departments to deliver strategic business outcomes:
 - Collaborated with CEO on board/investor communications and delivered quarterly and annual reports of OKR, product roadmap, and strategic insights.
 - Collaborated with the CEO and Marketing to develop go-to-market strategies, and drive growth through a company blog and advanced SEO.
 - Partnered with Customer Success to streamline support using Intercom and Fin AI, automating 70% of the workload.

Technical Lead **Mar 2020 – Mar 2022**
Plural.com **Palo Alto, CA**

- Developed and launched the company's MVP, acquiring 2,000+ users and 800+ skills in 8 countries within the first release cycle:
 - Built the promotional landing page in React, resulting in more than 20k signups to the waitlist.
 - Built the backend application using NodeJS, Express, PostgreSQL and Relay GraphQL API, as a service based monolith ready for microservicing.
 - Developed and published the mobile apps using React Native and GraphQL for both iOS and Android.
 - Built the web application and the admin dashboard using React, GraphQL and Redux.
- Spearheaded technical improvements that significantly enhanced system efficiency and performance and streamlining development processes:
 - Pioneered the CI/CD pipeline in CircleCI, automating all deployments based on git version control, reducing deployment time by 40%.
 - Achieved 80% backend test coverage using Mocha and Supertest resulting in a 30% drop in bugs.
 - Reduced regression bugs by 50% by introducing sandboxed ad-hoc builds using Fastlane and web builds using Netlify's Preview API.
 - Architected and implemented an internal suite of tools to integrate Jira, Git, and CI/CD, reducing development time on administrative tasks by 70%.
 - Conducted stress testing of backend systems to ensure system reliability under high load conditions.
 - Automated iOS code provisioning with Fastlane, eliminating manual effort and significantly boosting engineering efficiency.
- Led the development of the search and recommendation engine, increasing search/click rates by 50% and query matching by 30%:
 - Built an Elasticsearch API, improving search and fuzzy matching. Used scoring and indexing techniques to balance relevance and ensure 99% uptime.
 - Achieved precise job and up-skilling recommendations with SkillGraph, a graph of skills, professionals and their networks, using Neo4j, APOC and ML.
 - Improved semantic recommendation results using BERT for contextual understanding of job titles and descriptions.
- Developed a cross-platform centralized notifications system using RabbitMQ, Sengrid, Twilio and One Signal improving user retention by 20%.
- Architected and led the development of the Messenger with GraphQL subscriptions, driving users to shift conversations from external platforms to the app.
- Led a team of designers and engineers, prioritizing delivery while evolving both the product and the tech stack from the ground up:
 - Introduced Agile SDLC using Jira, implementing sprint planning and reports improving organization, team productivity and delivery speed.
 - Provided technical support and mentorship, fostering a collaborative culture leading to the promotion of a teammate to Tech Lead and myself to CTO.

Lead Software Engineer

Relax International

Jul 2019 – Feb 2020

Amsterdam, Netherlands

- Implemented an Identity Provider using SailsJS, OAuth 2.0 and OIDC, enabling secure authentication and authorization across the organization's applications.
- Architected and developed a centralized translation management system using SailsJS and i18n, supporting over 30 languages across all company apps.
- Built and maintained three fullstack web applications using SailsJS, delivering both frontend interfaces and backend APIs in a unified MVC architecture.
- Planned and diagrammed ERDs for the aforementioned software platforms optimizing data structure and flow in both the application and the database levels.
- Architected and worked with my team to develop an API for real-time hotel-information search and booking across multiple providers.

Lead Software Engineer

Dreidev

Oct 2018 – Jun 2019

Berlin, Germany

- Led the development of 3 web applications from concept to launch, managing 3 engineers and 2 designers to deliver maintainable products on schedule.
- Maintained and enhanced existing web applications, ensuring timely feature rollouts that drove client retention and generated new leads through client referrals.
- Mentored 4 engineering interns, balancing their growth with business priorities. Two were promoted to full-time roles as a result of their progress.
- Introduced frontend unit testing with Jest, establishing an 85% code coverage baseline that significantly accelerated debugging and release cycles.

Software Engineer

Dreidev

May 2017 – Sep 2018

Berlin, Germany

- Delivered scalable APIs and data workflows using Test-Driven Development (TDD) in 5 web applications (AngularJS and ReactJS with Django/Python).
- Built a code generator to standardize project scaffolding, reducing setup time (20%), improving codebase consistency, and increasing client capacity (25%).
- Implemented a CI-based deployment pipeline, standardizing releases and enhancing engineering team's productivity by reducing deployment time by 60%.

Software Engineer

KodingLab

Feb 2017 – April 2017

Silver Spring, MD

- Contributed to the development of a full-stack collaborative coding web application using MeteorJS success.
- Built an interactive front end powered by WebSockets, enabling real-time collaboration between engineers.
- Introduced and implemented eslint-config-skycode, eliminating JS code inconsistencies across the team and unifying code style.
- The platform was adopted by leading universities, including the German University in Cairo, to support computer science education.

Research Assistant

HCI Lab - University of Passau

Apr 2017 – Jun 2017

Passau, Germany

- Contributed to the research of Human-Computer Interaction (HCI) projects focused on integrating biofeedback technologies into real-world applications.
- Led the development of a state-of-the-art remote biofeedback system using wearable devices, enabling patient monitoring outside clinical environments.
- Partnered with Passau's top healthcare provider to replace traditional, in-house biofeedback systems with a more accurate, affordable, and portable solution.
- Recognized by the Department Chair, published an academic paper with IEEE, and received a recommendation that led to my acceptance into the TUM MSC program.

Teaching Assistant (Junior)

German University in Cairo

Feb 2015 – Feb 2017

Cairo, Egypt

- Instructed Computer Science and Bioengineering students in Data Structures and Algorithms, and Game Development in Java and Python.
- Developed teaching materials and guided students through practical applications to reinforce theoretical understanding.
- Assessed and graded assignments, providing detailed feedback to support academic progress.
- Contributed to an increase in student satisfaction from 40% to 85% over the course of the semester through enhanced instruction and engagement.

Open Source

- **apple-signin-auth**: Authored the go-to Apple authentication Node.js library, with 3M+ downloads and adoption in 400+ open source projects.
- **react-apple-signin-auth**: Authored the number one library for integrating Apple Sign-In in JS frontends, with 2M+ downloads and adoption in 500+ projects.
- **react-native-stripe-checkout-webview**: First-ever standard RN integration for Stripe payments. Contacted by Stripe to advise on the architecture of the official SDK.
- **stylelint-rem-over-px**: Community standard plugin that converts px to rem, reducing CSS migration time from days to seconds and eliminating errors.
- **ai-zero-shot-classifier**: Zero-shot classification tool combining Word2Vec and OpenAI embedding API to classify unstructured data with no labeled examples.

Publications

Biofeedback in the Wild – A Smartwatch Approach

IEE • University of Passau

2018

Athens, Greece

Education

B.E. Thesis – Visiting Researcher

University of Passau

Grade: 1.0 Excellent – Top of Class

2017

Passau, Germany

BSc in Computer Science and Engineering

German University in Cairo

GPA: 1.36 | Grade: Excellent with Honors | Activities: ACM International Collegiate Programming Contest, TiQ Debate club.

Sep 2013 – Jun 2018

Cairo, Egypt

Key Technologies

- **Programming / Scripting Languages**: Javascript, Typescript, NodeJS, Python, Bash, Java, C++, Haskell
- **Frontend Frameworks and Tools**: React, React Native, NextJS, Vite, Svelte, NuxtJS, Gatsby, Webpack, Rollup, Tailwind, Framer
- **Backend Frameworks**: Express, SailsJS, Django
- **Databases / Datastores**: SQL, MongoDB, Neo4j, PineCone, Qdrant / Elasticsearch, Redis
- **Message Brokers**: RabbitMQ, Kafka
- **Containerization**: Docker, Kubernetes
- **Cloud Providers**: AWS, Vercel, Netlify
- **CI/CD**: Github Actions, CircleCI, Jenkins, TravisCI, ArgoCD
- **API Standards**: GraphQL (Relay/Apollo), REST, JSON:API
- **Observability**: Kibana, Grafana, DataDog
- **IaC**: AWS CloudFormation, Terraform
- **GenAI**: BERT, OpenAI API / GPT, Gemini, Sonnet/Claude, FluxAI, MCP, SWARM, A2A, RAG, LangChain, Agentic Workflows, n8n
- **NLP Techniques**: Tokenization, Word Embeddings, Attention Mechanisms
- **Machine Learning**: TensorFlow, PyTorch, Hugging Face Transformers

Languages

- **English**: Fluent - **Portuguese**: B1 - **German**: A2 - **Arabic**: Fluent - **Spanish**: A1 - **French**: A1 - **Japanese**: A1