

# Ahmed Tarek (aka Tokyo)

## Senior Software Engineer

Work authorization: EU Citizen (No sponsorship required)

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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  
Plural.com

Apr 2022 – Present  
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:
  - Oversaw 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.
- Oversaw 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  
Plural.com

Mar 2020 – Mar 2022  
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 process:
  - 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