Kevin Hany Bastawrous

Cairo, Egypt

📞 +20-1286060806 ✉ kevin.bastawrous@gmail.com 💼 kevin-hany 🔗 kevo-1 📁 kevo-1.github.io 📊 Kevin.H

Objective

Computer Science student specializing in backend engineering, distributed systems, and machine learning pipelines. Built scalable APIs handling 5k+ concurrent operations with 40% latency reduction through Redis caching optimization. Developed ML models for healthcare prediction with rigorous feature engineering and ensemble methods. Competitive programmer (Codeforces Pupil, 1299 rating) with 700+ problems solved. Currently leading backend curriculum development for 30+ developers at Open Source Community.

Work Experience

Commercial International Bank (CIB)   **July 2025 – Aug 2025**
Summer Intern   *Cairo, Egypt (Remote)*

- Researched strategies on **AI-driven cybersecurity**, sustainable finance, and risk management, strengthening knowledge of secure system integration.
- Collaborated with professionals in **AI/ML and security domains**, gaining exposure to practical applications of AI ethics and digital transformation initiatives.

Education

Ain Shams University   **Expected June 2027**
Bachelor of Computer Science   *Cairo, Egypt*

- CGPA: 3.85/4.0
- Relevant Coursework: Algorithms and Data Structures, Operating Systems, Artificial Intelligence, Computer Architecture, Software Engineering

Technical Skills

Languages: Python, C++, Go, TypeScript, JavaScript, SQL
Backend & Databases: Node.js, NestJS, Express.js, PostgreSQL, MongoDB, Redis, Prisma ORM
DevOps & Tools: Docker, Git, GitHub Actions, Postman, JWT Authentication, BCrypt
ML & Data Science: TensorFlow, Scikit-learn, Pandas, NumPy, Jupyter Notebook
Languages Spoken: Arabic (Native), English (Fluent), French (Basic)

Projects

URL Shortener Service | TypeScript, NestJS, Prisma, PostgreSQL, Redis   **2025**

- Architected a production-ready URL shortening service managing **5,000+ URL mappings** with type-safe TypeScript design and Prisma ORM for reliable database operations.
- Optimized redirect latency by **40%** through implementing Redis caching layer with LRU eviction policy and PostgreSQL query optimization using composite indexes.
- Built secure REST APIs with NestJS decorators, request validation pipes, DTO pattern, and centralized exception handling for production-grade reliability.

Hospital Readmission Predictor | Python, Scikit-learn, Pandas, NumPy   **2025**

- Developed end-to-end ML pipeline predicting **30-day patient readmission risk** using ensemble methods (Random Forest, Gradient Boosting) achieving strong F1-score through rigorous hyperparameter tuning.
- Performed comprehensive **feature engineering and preprocessing**: handled missing values with domain-informed imputation, encoded categorical variables, scaled numerical features, and addressed class imbalance using SMOTE oversampling.
- Conducted model evaluation through stratified k-fold cross-validation, ROC-AUC analysis, precision-recall curves, and confusion matrix interpretation, documenting methodology in Jupyter notebooks.

Camaroo (Custom Programming Language) | C++, CMake, Compiler Design   **2024 – Ongoing**

- Designed and implemented complete **Lexer, Recursive Descent Parser, and Abstract Syntax Tree** for interpreted language supporting variable declarations, arithmetic expressions, and type inference.
- Applied compiler theory principles including LL(1) parsing, symbol table management, and panic-mode error recovery to provide meaningful syntax error messages and improve parser robustness.

AutoComplete Text Editor | C++, Qt Framework, Trie Data Structure   **2025**

- Built interactive text editor with **real-time autocomplete** using Trie-based prefix matching, reducing lookup complexity from $O(n)$ linear search to $O(k)$ where k is prefix length.
- Implemented frequency-based ranking algorithm and custom dictionary management, processing **10,000+ vocabulary entries with ¡50ms response time** for seamless user experience.

Extracurricular Activities

Open Source Community (OSC)   **May 2025 – Present**
Backend Vice Head   *Cairo, Egypt*

- Leading the development of a comprehensive **two-level backend engineering agenda** to mentor junior developers through practical, production-grade projects.
- Currently presenting **Level 2 track** focused on **TypeScript, NestJS, Prisma ORM, WebSockets, caching mechanisms, microservices, and software design patterns**.
- Collaborating with senior engineers to ensure **testing, version control, and documentation best practices** are consistently applied across training modules.
- Organizing **code reviews, technical discussions, and knowledge-sharing sessions** to promote software development standards and scalability principles.

ACM ICPC Community – Egyptian Collegiate Programming Contest   **Aug 2023 – Aug 2025**
Active Competitor (Ranked 140th in ECPC 2025)   *Cairo, Egypt*

- Achieved **Codeforces Pupil rating (1299)** solving 700+ algorithmic problems across graph theory, dynamic programming, greedy algorithms, segment trees, and number theory.
- Applied advanced competitive programming techniques including time complexity analysis, space optimization, binary search variations, and mathematical problem-solving under strict time constraints.