MUHAMMAD BASSIOUNI

SOFTWARE ENGINEER

muhammad.m.bassiouni@gmail.com ⬦ Cairo, Egypt (Open to Remote and Relocation)

linkedin.com/in/bassiounix ⬦ github.com/bassiounix ⬦ bassiounix.github.io ⬦ youtube.com/@bassiounix

SUMMARY

Software Engineer and Open Source Contributor with 2 years of experience in backend development, compiler and toolchain technologies. Worked at Menoufia University (enabling digital transformation). Contributed to LLVM. Interested in working on cutting-edge, scalable services technology with global impact.

EXPERIENCE

Backend Software Engineer, Menoufia University, *Menoufia, Egypt.* Sep 2023 – Sep 2024
Public Egyptian institution providing education, research, and community services across diverse disciplines.

- Reduced yearly subscription costs by **$40K** by rebuilding outsourcing portal backend with Nest.js & SQL Server.
- Increased system performance by **35%** via migrating to new server host & tech stack using Docker & Node.js.
- Secured API for **88K** users by implementing authorization system using Passport.js & JWT.

Site Supervisor, Udacity, *Menoufia, Egypt.* Oct 2022 – Dec 2023
Online learning platform offering industry-focused tech and business programs.

- Led & coordinated efforts of 50+ DECI sessions, ensuring smooth execution & alignment with educational goals.
- Delivered 95% accurate & effective technical content by providing detailed feedback maintaining high standards.
- Collaborated with 10+ instructors & supervisors to enhance learning & create environment for student success.

Backend Software Engineer Intern, Banque Misr, *New Cairo, Egypt.* Jul 2023 – Sep 2023
Largest bank in Egypt providing retail, corporate, and investment banking services.

- Built real-time currency conversion API using Spring Boot, Docker, and Render for instant conversions.
- Doubled retrieval speed via Redis caching and cron jobs, ensuring reliability with Javadoc, Swagger & JUnit.

SKILLS

Programming Languages	Python, TypeScript, C, C++, Java
Frameworks & Libraries	React Native, Flask, Nest.js, Express.js, Spring Boot, TypeORM, Hibernate
Databases	MySQL, PostgreSQL, Redis
Tools	Node.js, Git, Graphite, Docker, Bash, Linux, Postman, AWS, CircleCI
Languages	English (Advanced), Arabic (Native)
Soft Skills	Attention to detail, Anticipating Problems, Problem-Solving, Adaptability, Effective Communication, Public Speaking, Collaboration and Team Player

EDUCATION

Bachelor of Artificial Intelligence in Intelligent Systems, Menoufia University, *Egypt.* Oct 2021 – Jun 2025

- **Coursework**: Object-Oriented Programming, Data Structures & Algorithms, Operating Systems, Database Systems, Logic Design, Deep Learning, Computer Vision, Cybersecurity, Smart Cities, Robotics, IoT, FPGA.

OPEN SOURCE PROJECTS

Committer, LLVM. Jan 2025 – Present
LLVM Project is a collection of modular and reusable compiler and toolchain technologies. Pull Requests

- Facilitated building LLVM `libc++` against LLVM `libc` by implementing `wctype` (unicode) utilities. [RFC]
- Extended safety of LLVM `libc` by adding C11 bounds-checking interfaces with Annex K safe APIs. [RFC]
- Implemented C++ `constexpr` math functions in `libc` by refactoring math functions to header-only. [RFC]
- Improved build accuracy and consistency by fixing LLVM `libc` header generation. [PR]
- Extended `clang` capabilities by adding `__bf16` type support macros with number literal suffix. [PR]
- Increased test isolation by making `str_to_float_comparison_test` hermetic in LLVM `libc`. [PR]
- Optimized LLVM `IR` performance by fixing missed `i128` split optimization. [PR]

PROJECTS

GitHub Link. github.com/bassiounix/open-source-projects

Lox Interpreter. Educational interpreter in Java & C; Built compiler with custom tokenizer, parser, AST generation, static analysis, and interpreter for context-aware execution.

Secure HTTP Client. Built end-to-end encrypted HTTP system using C++ & httplib. Utilized RC4 encryption over network connection & Elliptic-curve Diffie-Hellman key exchange algorithm.

Rosetta. Ancient corpus translator; Facilitated ancient hieroglyph translation by training AI models with PyTorch and YOLOv8, and built a React Native app integrating detection, translation, and personal history features.

Wind. Developed reproducible environment configurations on Windows 11 using PowerShell 7, winget & vcpkg.

Zoi. AI-driven Tic-Tac-Toe; Built tic-tac-toe game using Rust and Min-max algorithm.

CERTIFICATES & AWARDS

GEM Hackathon 2025 Third Edition, by The Grand Egyptian Museum & Legacy.	Dec 2025
AWS Certified Cloud Practitioner, foundational certification in AWS Cloud.	Nov 2024
FinYology FinTech Hackathon, 4th place finalist among 50+ teams – Central Bank of Egypt.	Oct 2023
MINT Fintech Hackathon, 3rd place startup idea among 10 teams – EGBank & Startup Factory.	Aug 2023
Smart Governance Hackathon, 4th place in Money Governance category – AWS & Benha University.	Feb 2023
NTI AI Summer Training, Training in Python, Machine Learning, Deep Learning & AI Deployment.	Oct 2022
Full-Stack Web Development Nanodegree, EgFWD scholarship – Udacity & MCIT.	May 2022

EXTRA-CURRICULAR ACTIVITIES

- Created tech-oriented YouTube channel sharing experiences.
- Guided and supported many individuals in their personal and professional development.
- Joined Students for Egypt Chapter as Vice Head of Development Team and gave several seminars.
- Founded Community-X (Phoenix) Chapter and worked as events facilitator.