Abd El-Twab M. Fakhry

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Education

- **Faculty of Engineering, Al-Azhar University** — Cairo, Egypt
  Bachelor in Computers and Systems Engineering — *Sep. 2017 – Jun. 2022*

Extra-curricular Activities

- Finalist at Africa & Arab Collegiate Programming Championship (2020).
- 2x Finalist at Egyption Collegiate Programming Contest (2019, 2020).
- 3rd & 2nd palce at Al-Azhar Collegiate Programming Contest (2019, 2020).
- Teaching algorithmic topics, data structures, and problem-solving paradigms to +50 participants.
- Providing Multi-level training during the year and writing problems for weekly sheets and contests.
- Solved +1000 algorithmic challenges on different online judges.

Selected Projects

- **Decentralized Vault** | *Next.js - Hardhat - Ethers.js - Docker* — *Jun. 2022 – Present*
  Blockchain-based, self-hosted, decentralized, and encrypted cloud storage system.
  - Implementing upgrade-able smart contracts for storing users' files metadata using the proxy pattern.
  - Developing a single-page application (SPA) using Next.js for static-site rendering (SSR).
  - Using the IPFS p2p network for storing users' files after being encrypted.
  - Using client-side encryption/decryption method for more confidentiality and privacy.

- **Next Prayer** | *C++ - Python - Bash/Shell - Roff - Docker* — *Sep. 2021 – Present*
  Islamic prayer reminder for Unix status bars.
  - Implementing an Islamic prayer reminder for Unix status bars using web API.
  - Maintaining an AUR (Arch-user repository) package and a Docker image for non-Unix users.

- **Anthology of Algorithms and Data structures** | *C++ - Bash/Shell* — *Aug. 2020 – Present*
  Common code for competitive programming in C++.
  - Implementing an open-source library for common code for competitive programming in C++.
  - Including graph theory, problem-solving paradigms, mathematics, data structures, and some helpful tools.

- **Queueing ModelSim** | *Python - Tkinter (GUI)* — *Dec. 2020*
  Queueing models simulator.
  - Implemented software for the calculation of characteristics of different queues having the Batch markovian arrival process (BMAP) as an input.
  - Implemented a deterministic queue model using the prefix sum technique, which helped to know the characteristics of the queue at any point in time.

Technical Skills

- **Programming Languages**
  C/C++ | Java | Python | Solidity | JavaScript | Bash/Shell | SQL | LaTeX | HTML/CSS
- **Technologies**
  Next.js | PostgreSQL | Prisma | Hardhat | Ethers.js | Docker
- **Tools**
  GNU/Linux | Git | Make | Emacs | Vim | CI/CD