Abd El-Twab M. Fakhry

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Education

- **Faculty of Engineering, Al-Azhar University** — Cairo, Egypt
  Bachelor of Science (BSc) in Computers and Systems Engineering; GPA: 3.2 (B) — *Sep. 2017 – Aug. 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

- **Devault** | *Next.js - Hardhat - Ethers.js - Docker* | *Web app.* — *Apr. 2022 – Present*
  A Blockchain-based, decentralized, and end-to-end encrypted cloud storage.
  - Developing a single-page application (SPA) using Next.js for static-site rendering (SSR).
  - Logging into the decentralized vault (devault) using a crypto wallet (e.g. Metamask).
  - Implementing upgrade-able smart contracts as a distributed and public database using the proxy pattern.
  - Encrypting, splitting, and distributing the actual encrypted files on the InterPlanetry File System (IPFS) Network.
  - Using the client-side encryption/decryption method for more confidentiality and privacy.

- **Next Prayer** | *C++ - Python - Docker* | *Command-line tool* — *Sep. 2021 – Present*
  Islamic prayer reminder for Unix status bars.
  - Using web APIs to fetch the timings for one year and caching them locally to query them off-line.
  - Sending a notification when the time of adhan comes and showing the next prayer and its time in the status bar.
  - Providing a config file for the users to set their preferences and the parameters used by the API.
  - Maintaining a Docker image and an Arch-user repository (AUR) package.

- **Anthology of Algorithms and Data structures** | *C++* | *Library* — *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, and data structures.

- **Queueing ModelSim** | *Python* | *Desktop app.* — *Dec. 2020*
  Queueing models simulator.
  - Implemented software that calculates the characteristics of queues with the markovian arrival process (MAP).
  - Implemented a deterministic queue model using the prefix sum to easily identify the characteristics at any time.

Technical Skills

- **Programming Languages :** C/C++ • Java • Python • Solidity • JavaScript • Bash/Shell • SQL • LaTeX • HTML/CSS
- **Technologies :** Next.js • Node.js • Hardhat • Ethers.js
- **Tools :** GNU/Linux • Git • Make • Emacs • Vim • Docker • CI/CD • Agile/Scrum • Element