Saad Mohammed Anis

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Profile Summary

A highly skilled software and ML engineer and with over one year of experience in full-stack and iOS app development, and system design and deployment. Proficient in designing and optimizing deep learning models, particularly in medical imaging and NLP. Experienced in leading teams, mentoring interns, designing systems, and developing web and mobile applications for professional medical environments. I am seeking a challenging role where I can leverage my expertise in full-stack and mobile development, machine learning, DevOps, and MLOps to build secure, efficient, and innovative systems that contribute to the success of new and existing projects.

Skills

Languages

Python, Java, Swift, JavaScript, TypeScript, GDScript, PHP, SQL, HTML, CSS, C#, C++, C

Frameworks

Flask, FastAPI, Angular, SwiftUI, React, Node.js, Laravel, PyTorch, Transformers, Apache Spark, LSP4J

Tools

Maven, Git, Docker, Kubernetes, Jupyter, NGINX, Gunicorn, ANTLR, Wireshark, Packet Tracer, Unity, Godot

Experience

Full-Stack Developer (Research Associate)   **Doha, Qatar**

Qatar University (in collaboration with Qatar Computing Research Institute)   *March 2024 – Present*

- Led the system design and development of a **full-stack web platform** for oral cancer detection.
- **Managed a team** of five interns, delegating tasks and driving project milestones to completion.
- Architected and implemented a new version of the platform, applying **software development best practices**.
- Built the platform with **FastAPI**, **React**, **MySQL**, and **Docker**, ensuring scalability and robust performance.
- Developed secure authentication and authorization using the **OAuth2 protocol**, and **row-level access control**.
- Created an iOS app in **Swift**, enabling lesion identification through on-device models and patient report generation.
- Developed a complete **full-stack user study web application** with survey design, data collection, and statistics.
- Collaborated with doctors, professionals, and researchers from universities and hospitals from **over six countries**.
- Designed, optimized, and tested various **deep learning models** for the diagnosis of oral cancer lesions.

Software Engineering Intern   **Doha, Qatar**

Qatar Computing Research Institute   *May 2021 – July 2021*

- Contributed to the development of a **Flask-based** social media analytics platform, deployed with **Kubernetes**.
- Integrated **Angular** frontend, utilizing **RxJS** and **NgRx** for reactive state management.
- Enhanced frontend query validation with **Angular** validators and resolved bugs to improve efficiency.
- Developed and executed unit tests for backend functions using **Python's unittest framework**.

Education

University of Glasgow   **Glasgow, Scotland**

M.S. in Computing Science   *September 2022 – September 2023*

- Graduated with **Distinction.**
- **Key Courses:** Information Retrieval, Deep Learning, Text-as-Data (NLP), Big Data, HCI, Human-Centered Security.
- **Thesis:** *Implementation and Evaluation of a Language Server for the Fun Programming Language*

Qatar University   **Doha, Qatar**

B.S. in Computer Science   *September 2017 – May 2022*

- **GPA** 3.83 out of 4.00.
- Graduated with **High Distinction.**
- **Dean's List** for six semesters.
- **Key Courses:** Algorithms, Data Structures, Databases, Web Development, Operating Systems, Machine Learning.
- **Thesis:** *Bayan: Towards an Effective Arabic Fatwa Search Engine*

Projects

Language Server Implementation using LSP4J   **University of Glasgow**
Master's Dissertation   *June 2023 – September 2023*

- Developed a language server for a custom programming language using **Java, Maven, LSP4J,** and **TypeScript**.
- Designed and implemented language parsers and visitors with **ANTLR**, enhancing language processing capabilities.
- Added features like error/warning highlighting and intelligent auto-completion.
- Conducted user studies demonstrating a **42% improvement** in coding efficiency and **100% increase** in effectiveness.

Bayan: Arabic Search Engine   **Qatar University**
Bachelor's Dissertation   *September 2021 – May 2022*

- Developed an Arabic search engine for Islamic jurisprudence queries using **Flask, PyTorch, JavaScript**, and **SQLite**.
- Trained a **transformer-based re-ranking model**, achieving an **F1 of 81.5%**, outperforming all prior submissions.
- Surpassed Google Search's results with an **NDCG@10 score of 0.93** on the test set.
- Engineered a real-time system to extract, score, and annotate answers from webpages using a custom corpus.
- Led web development efforts, implementing features like user management, search history and preferences.
- Deployed the application with **NGINX** and **Gunicorn**, leveraging **SQLite** for data storage, caching, and logging.

Personal iOS Application Development Projects

- Developed a full daily routine application, a flag listing and filtering application, and various other applications.
- Used **Swift** and **SwiftUI** to create native user interfaces adhering to Apple's Human Interface Guidelines.
- Integrated **Core Data** and **SwiftData** into applications for efficient data management across applications.

Miscellaneous Deep Learning Projects

- Fine-tuned a **RoBERTa model**, achieving **86.2% accuracy** and a **macro F1 of 82.0%** in classifier comparisons.
- Developed a **CNN** and fine-tuned a **ResNet50** model to classify cancer cell images with **98%** accuracy.

Full-Stack Blogging Engine

- Developed and actively maintain a full stack blogging engine with a custom content delivery network and RSS feed.
- Created the blog frontend for viewing and backend for posting using **Flask, Jinja,** and **SQLite**.

Personal Video Game Development Projects

- Utilized **Unity** and **C#** to develop 2D platformer games and a 3D obstacle course game for Windows and Android.
- Currently learning **Godot** and utilizing **GDScript** to develop a 2D platformer game for Windows and macOS.

Publications

Unal, D., AlRaimi, A., Das, S. C., & Anis, S. M. (2024).

Quantum Computing Based Attacks on Cryptography and Countermeasures.

In Hammoudeh, M., Alessa, A. T., Sherbeeni, A. M., Firth, C. M., Alessa, A. S. (Eds.),
Quantum Computing: A Journey into the Next Frontier of Information and Communication Security.
CRC Press. ISBN: 978-1-032-75705-6

References

Available upon request.