

Rakan Alrasheed

Aspiring Software Engineer

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PROFILE SUMMARY

Innovative and driven Computer Science graduate specializing in AI and Data Science, with extensive experience in developing predictive models and leveraging cloud services for AI integration. Skilled in Full-Stack Development, with a proven ability to build and optimize application functionality across various projects and internships. Demonstrated expertise in automation frameworks and performance optimization.

EDUCATION

Shiley-Marcos School of Engineering, University of San Diego, California.

May 2024

- Bachelor of Science / Bachelor of Art in Computer Science
- Concentration in Artificial Intelligence and Data Science.

Harvard University

Certified June 2024

- Artificial Intelligence and Machine Learning with Python

Relevant Courses: Data Structures, Algorithms & Analysis, Advanced Comp Problem Modeling, Automata, Computability & Lang, Data Science Foundations, Intro to AI, Principles of Digital Hardware, Object-oriented Design, Web Programming, and Neural Networks.

SKILLS AND QUALIFICATIONS

Programming skills and Languages: Java, Python, C, C++, Swift, TypeScript, HTML, CSS, JavaScript, SQL.

Machine Learning & AI: YOLO, RandomForest, XGBoost, CNNs, deep learning, Computer vision, NLP, LLM, Azure, Tensorflow.

Web Development: React, Svelte, Django, Node.js, REST APIs, JQuery.

Tools & Technologies: AWS, MySQL, Git, GitHub, Unix, Tensorflow, version control systems, Agile Methodologies, DevOps, NoSQL, JUnit, Pytest, Selenium, JMeter, Jenkins, JIRA, OWASP ZAP

Soft Skills: Leadership, Collaboration, Problem-Solving, Adaptability, Communication skills, fast learner, **scrum** processes.

PROFESSIONAL EXPERIENCE

Data and AI Engineer | SDAIA, Riyadh (Apprenticeship)

July - Oct 2024

- Leveraged **DQN** agents and **reinforcement learning** to optimize traffic flow dynamically with **NLP**-enhanced decision-making for traffic signal adjustments, reducing traffic volume by 40% in simulations.
- Conducted **data preprocessing**, analysis, and visualization to refine AI models, using **machine learning** and **NLP** for traffic trend analysis and predictive modeling, leading to actionable insights for stakeholders.
- Utilized **computer vision** for emergency vehicle detection, enabling automatic signal adjustments based on siren activation. Implemented **LLM** techniques for system feedback, achieving a 93% accuracy rate.

Software Engineer | Ecorithms, San Diego, CA (Internship)

July - Sep 2023

- Developed and maintained a mobile web application for the solid waste industry, utilizing **Svelte** for front-end development and Node.js for back-end integration. Also implemented **MongoDB** for data management.
- Integrated extensive datasets, enabling the app to audit, recognize, and categorize waste with 89% accuracy using **YOLO**, a real-time object detection model.
- Automated test cases with **Selenium** and **pytest**, improving test coverage by 35%. Conducted **continuous testing after each sprint** and utilized **JMeter** for performance and load testing in an **Agile environment**.
- Set up **Jenkins** for **CI** and automated testing, ensuring smooth deployment and continuous feedback
- Automated data handling systems to ensure compliance with **data protection** best practices.

Web Developer | InterOcean Systems, LLC, San Diego, CA. (Internship)

Jun - August 2022

- Designed, developed, and maintained responsive and user-friendly websites using **HTML**, **CSS**, **TypeScript**, and **React**, resulting in a 40% increase in website traffic.
- Implemented performance tests to evaluate the scalability and responsiveness of web applications.
- Conducted **security testing** using **OWASP ZAP**, identifying vulnerabilities like **XSS** and **SQL injection** and ensuring compliance with **data protection best practices**. Collaborated with the team to implement security measures and establish **data privacy policies**.

PROJECTS

Obstacle Avoidance App | Project Lead

AUG 2023 – MAY 2024

- Contributing to a software engineering project that created an app to assist visually impaired individuals in navigating obstacles by wearing a phone on the chest that provides helpful audio feedback.

- Focusing on coding the application using Swift and leading the AI integration, which includes training the AI with specific datasets using **YOLO v8** for precise obstacle detection and distance calculation
- Participated in **sprint-based development** to conduct **unit tests** and **(BDD) testing**, ensuring seamless functionality at each iteration in collaboration with the team
- Awarded the Computer Science Best Capstone Award for innovative design and impactful solution.

Voice Command System | Academic Project

- Developed a voice command system using **Raspberry Pi** for controlling room lights.
- Implemented speech recognition algorithms, achieving a 95% success rate in hands-free control.

Apartments Management System | Personal Project

- Created a user-friendly system and interface for managers, allowing easy access and updating of apartment details via the MySQL database.
- Reduced time spent on data entry by 30% through a streamlined interface design.

Plant Traits Competition 2024 | Personal Project

- Developed predictive models using CNNs and XGBoost, incorporating climate and satellite data.
- Improved prediction accuracy by 20% using multi-task learning and ensemble strategies.

S&P 500 Price Rise and Fall Prediction | Project Lead

- Developed and optimized predictive models using RandomForest and XGBoost to forecast S&P 500 stock movements.
- Achieved an 85% precision rate through extensive data preprocessing, feature engineering, and backtesting.

AWARDS AND HONORS

Alcalá Hundred

May 2024

- Selected into the top 100 of the Class of 2024 Alcalá 100, a prestigious USD Alumni Association group, recognizing exceptional leadership, and academic excellence.

International Collegiate Programming Contest

Nov 2023

- Achieved a superior ranking in the ICPC 2023 Regional Programming Contest, leading all San Diego universities, and earned a spot in the 2024 National Contest.