

# Rakan W. Abu Awwad

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## EDUCATION

Virginia Tech | Blacksburg, VA

Aug 2025 – Present

M.S. in Computer Science

CGPA: 4.00/4.00

- **Concentrations:** Software Development & Applications
- **Related Coursework:** Machine Learning, Information Visualization, Web Application Development, Ethics and Professionalism in CS, Virtual Environments

Virginia Tech | Blacksburg, VA

Aug 2021 - May 2025

B.S. in Computer Science

CGPA: 3.23/4.00

- **Honors:** 3x Dean's List: Spring 2024, Fall 2024, Spring 2025
- **Related Coursework:** Data Structures & Algorithms, Artificial Intelligence, Object-Oriented Programming, Computer Systems, Software Design, Comparative Languages

## WORK EXPERIENCE

Software Engineer Intern – (Supermarket Rubu Al-Quds) | Amman, Jordan

June 2023 - Aug 2023

- Developed RESTful APIs using **Python/Django** and SQL databases, implementing core business logic, data validation, and transactional inventory workflows
- Designed and optimized relational databases schemas and queries, improving query performance by **40%** through strategic indexing and 3NF normalization
- Implemented secure authentication and role based authorization using token-based access control to protect sensitive operations.

## PROJECTS

Auto Base - Car Dealership Management System

Aug 2025 - Dec 2025

- Built a full-stack web application using **JavaScript(Node.js)**, **Express**, and **MySQL** exposing **RESTful APIs** to support vehicle inventory management, customer records, and service scheduling.
- Implemented secure authentication and authorization with **JWT** and role-based access control enforcing backend validation and transactional business logic, ensuring protected access and consistent data updates across the system
- Developed a dynamic frontend interface using **React**, **HTML**, and **CSS** with `fetch()`-based API integration, enabling real-time dashboard updates, form handling, and persistent user sessions. Dockerized app stack

Sensitive Email Detection Service

Aug 2025 - Dec 2025

- Built a **Python/Flask** backend service exposing a `/predict` API that classifies sensitive email content using a hybrid pipeline combining TinyBERT NLP inference and regex-based PII detection
- Implemented sentence-level processing and validation optimized for low-latency, real-time analysis, while running the backend entirely locally to reduce false positives, improve privacy, and eliminate cloud dependencies

Auto Sales Dealership Platform

Jan 2025 - May 2025

- Built core application logic using **Node.js**, **Next.js**, and **MongoDB Atlas**, supporting inventory management, admin workflows, and dynamic content updates
- Designed Mongoose schemas and executed data migrations from file-based storage to a cloud-hosted database, improving scalability and data reliability
- Integrated **Cloudinary** for media handling and deployed the application on **Vercel**

## PUBLICATIONS

- **Kong, C., Abu Awwad, R., Meyer, J., Houston, C.** "Classification of Email Sensitivity"

Dec 2025

## ACTIVITIES

Virginia Tech App Team | Blacksburg, VA

- Collaborated with a team to develop an open-source project associated with Virginia Tech

Aug 2025 - Present

## SKILLS

**Programming Languages:** Python, Java, JavaScript, SQL

**Backend:** RESTful APIs, Express, Node.js, JWT, Middleware, Input Validation, Error Handling, Unit Testing, Flask, Django

**Databases:** MySQL, PostgreSQL, MongoDB

**Frontend:** React, Next.js, HTML, CSS

**DevOps & Tools:** Git, GitHub, Docker, GitHub Actions (CI/CD), Vercel, AWS, Linux

**Foundations:** Data Structures & Algorithms, Secure Programming, Algorithm Optimization