

# Rakan W. Abu Awwad

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## EDUCATION

<b>Virginia Tech</b>   Blacksburg, VA	Aug 2025 – Present
<i>M.S. in Computer Science</i>	<b>CGPA:</b> 4.00/4.00
● <b>Concentrations:</b> Software Development & Applications	
● <b>Related Coursework:</b> Machine Learning, Information Visualization, Web Application Development, Ethics and Professionalism in CS, Virtual Environments	
<b>Virginia Tech</b>   Blacksburg, VA	Aug 2021 - May 2025
<i>B.S. in Computer Science</i>	<b>CGPA:</b> 3.23/4.00
● <b>Honors:</b> 3x Dean's List: Spring 2024, Fall 2024, Spring 2025	
● <b>Related Coursework:</b> Data Structures & Algorithms, Artificial Intelligence, Object-Oriented Programming, Computer Systems, Software Design, Comparative Languages	

## WORK EXPERIENCE

<b>Software Engineer Intern</b> – ( <b>Supermarket Rubu Al-Quds</b> )   Amman, Jordan	June 2023 - Aug 2023
● Developed RESTful APIs using <b>Python/Django</b> 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 <b>40%</b> through strategic indexing and 3NF normalization	
● Implemented secure authentication and role based authorization using token-based access control to protect sensitive operations.	

## PROJECTS

<b>Auto Base - Car Dealership Management System</b>	Aug 2025 - Dec 2025
● Built a full-stack web application using <b>JavaScript(Node.js)</b> , <b>Express</b> , and <b>MySQL</b> exposing <b>RESTful APIs</b> to support vehicle inventory management, customer records, and service scheduling.	
● Implemented secure authentication and authorization with <b>JWT</b> 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 <b>React</b> , <b>HTML</b> , and <b>CSS</b> with <code>fetch()</code> -based API integration, enabling real-time dashboard updates, form handling, and persistent user sessions. Dockerized app stack	

<b>Sensitive Email Detection Service</b>	Aug 2025 - Dec 2025
● Built a <b>Python/Flask</b> backend service exposing a <code>/predict</code> 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	

<b>Auto Sales Dealership Platform</b>	Jan 2025 - May 2025
● Built core application logic using <b>Node.js</b> , <b>Next.js</b> , and <b>MongoDB</b> 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 <b>Cloudinary</b> for media handling and deployed the application on <b>Vercel</b>	

## PUBLICATIONS

● Kong, C., Abu Awwad, R., Meyer, J., Houston, C. "Classification of Email Sensitivity"	Dec 2025
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## ACTIVITIES

<b>Virginia Tech App Team</b>   Blacksburg, VA	Aug 2025 - Present
● Collaborated with a team to develop an open-source project associated with Virginia Tech	

## SKILLS

<b>Programming Languages:</b> Python, Java, JavaScript, SQL
<b>Backend:</b> RESTful APIs, Express, Node.js, JWT, Middleware, Input Validation, Error Handling, Unit Testing, Flask, Django
<b>Databases:</b> MySQL, PostgreSQL, MongoDB
<b>Frontend:</b> React, Next.js, HTML, CSS
<b>DevOps &amp; Tools:</b> Git, GitHub, Docker, GitHub Actions (CI/CD), Vercel, AWS, Linux
<b>Foundations:</b> Data Structures & Algorithms, Secure Programming, Algorithm Optimization