

# OSAMA ABU HAMDAN

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## PROFESSIONAL SUMMARY

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Backend engineer with extensive experience building scalable distributed platforms. Skilled in designing and developing robust backend services, APIs, and architectures that support high-traffic applications. Previously delivered large-scale backend systems at John Wiley & Sons (serving millions of articles and 100k+ daily visitors) and solutions at Wird.app (1,000+ daily users). At the ACES lab, built frameworks like FLEET HybridFlow, and SmartFlow to enhance the scalability and efficiency of federated learning in real-world environments. Combines technical expertise with hands-on development to deliver reliable, production-grade backend solutions.

## PROFESSIONAL EXPERIENCE

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**Safwa Academy** Delaware, USA (Part-Time/Remote)  
*Head of Technology* 2026 - Present

- Led technology strategy and infrastructure for online K-12 educational platform, managing LMS integration, student information systems, and scalable cloud architecture supporting 500+ students and 50+ educators.
- Oversaw development and deployment of custom learning tools and automated administrative workflows, reducing operational overhead by 40% while ensuring FERPA compliance and data security.
- Directed cross-functional tech team in implementing video conferencing solutions, assessment platforms, and parent portals, achieving 99.5% uptime and high user satisfaction.

**Abacus Cloud and Edge Systems** Arlington, TX, USA  
*Research Assistant* 2021 - 2026

- Built FLEET and SmartFlow frameworks for federated learning, reducing synchronization time by 47% and attracting hundreds of users. Created RENET, improving QoS satisfaction by 30% and video quality by 54%.
- Published 6 peer-reviewed papers in IEEE conferences with 60+ citations, advancing research in edge computing and federated learning systems.

**John Wiley & Sons** Amman, Jordan  
*Backend Developer* 2018 - 2021

- Built and maintained RESTful APIs and backend components in Java to support high-traffic publishing platforms, collaborating with Solution Architects and Project Managers to diagnose and resolve production issues.
- Contributed to search functionality for Cell and The Lancet journals, optimizing performance to handle 4M+ articles and serve 100k+ daily visitors with low latency.

**Wird.app** Amman, Jordan (Part-Time/Remote)  
*Backend Developer* 2022 - 2025

- Led team of 10 developers building Ramadan activity tracking platform with Django REST Framework backend, PostgreSQL database, Redis caching, React admin panel, and Flutter mobile app.
- Architected scalable APIs and optimized performance to support 1,000+ daily active users tracking activities, competing in challenges, and generating performance reports.

## EDUCATION

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**University of Texas - Arlington** August 2023 - June 2026  
PhD, Computer Science GPA: 4

- Thesis Title: Communication-Efficient and QoS-Aware Network Frameworks for Edge and Federated Learning Systems

**University of Nevada - Reno** August 2021 - August 2023  
Master's, Computer Engineering GPA: 3.9

- Thesis Title: Overcoming Bandwidth Fluctuations in Hybrid Networks with QoS-Aware Adaptive Routing

## SKILLS

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**Programming & Development:** Java, Python, Spring, Flask, Django, Django Rest Framework, REST APIs, GraphQL, Bootstrap, Selenium, BeautifulSoup, Maven, DevOps, Debugging Tools, MongoDB, MySQL, Bash

**Machine Learning & Research:** Deep Learning, Federated Learning, Keras, PyTorch, NumPy, Artificial Intelligence

**Networking:** P4, SDN, Mininet, TCP/IP, HTTP/HTTPS, Wireshark, Postman, OpenFlow

**Systems:** Linux/Unix, PostgreSQL, Redis, Git, Docker, Nginx, gRPC, API Development

**Others:** JIRA, Agile, SCRUM, Critical Thinking, Continuous Learning, Presentation Skills, Public Speaking, Leadership