

# Judy Abuquta

Computer Science Major  
Jeddah, Saudi Arabia

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## EDUCATION

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### **Effat University, Jeddah, KSA**

2022- 2026 (expected)

Bachelor of Science in Computer Science, Artificial Intelligence Specialization  
GPA: 3.59 / 4.0

### **Al Waha International School, Jeddah, KSA**

2019 – 2022

Completed high school education early and entered university at age 15.  
Earned 8 IGCSE O Level Subjects.  
GPA: 3.96 / 4.0

## PROJECTS

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### **Edge-Native Agentic NLP for Traffic Coordination**

2025

- Designed a smart-city traffic simulation using edge-native AI agents for semantic coordination.
- Integrated LLM-based reasoning with RAG and knowledge graphs for adaptive, real-time decision-making.

### **ML for Student Placement & Salary Prediction**

2025

- Developed a dual ML framework predicting employability outcomes and expected salary ranges.
- Evaluated classification and regression models using integrated academic and professional datasets.

### **Linear Regression via the Normal Equation**

2025

- Implemented the closed-form solution to linear regression using pure linear algebra.
- Demonstrated mathematical understanding through matrix-based optimization and visualization.

### **Hajj Companion AI Chatbot**

2025

- Built an AI chatbot providing accurate, context-aware guidance for Hajj and Umrah rituals.
- Integrated LLMs with Retrieval-Augmented Generation to ensure factual reliability.

## RESEARCH & PAPERS

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### **Student Employability and Salary Prediction Using Machine Learning**

2025

- Developed and evaluated a dual ML framework combining classification for employability prediction and regression for salary estimation.
- Integrated multi-source academic and professional datasets to assess predictive performance.

### **Strengthening IoT Security: A Comprehensive Approach to Zero Trust Implementation**

2025

- Analyzed Zero Trust Architecture strategies for securing IoT ecosystems.
- Evaluated continuous authentication, least privilege access, and micro-segmentation techniques.

## Enhancing Education with Image-Based AI

2024

- Performed literature review and analysis of image-based AI tools (ImageLM, MV-SEAS) for educational applications.

## A Comprehensive Study of Security Mechanisms in Software Engineering

2025

- Conducted a systematic literature review on integrating security practices across the SDLC, including DevSecOps and threat modeling.

## Recent Advances in Memory Management for Operating Systems: A Critical Analysis

2025

- Conducted a comparative analysis of three cutting-edge memory management approaches (Damascene, MI-GUARD, Mesh Memory).

## AWARDS & SCHOLARSHIPS

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### Queen Effat Citizenship Award — Nominee

2025

Institutional nomination recognizing leadership, citizenship, and community engagement.

### Merit-Based Scholarship (50%)

2022

Awarded for academic excellence based on IGCSE performance and early graduation.

## SKILLS

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### Programming & Web:

Python, Java, C++, SQL, JavaScript, HTML/CSS, PHP

### Data & Machine Learning:

Data Analysis, Pandas, NumPy, Scikit-learn, Jupyter Notebook, Statistics

### Foundations & Tools:

Data Structures, Algorithm Design, Software Engineering, Git, Cisco Packet Tracer, n8n

### Professional Skills:

Critical Thinking, Problem Solving, Research, Communication, Teamwork, Time Management