

Shahd Mansour El-Kazzaz

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Professional Experience

Fortinet Cybersecurity Engineer Intern

Jun 2025 – Present

Digital Egypt Pioneers Initiative - DEPI 📄

Hybrid

- **Threat Data Analysis:** Developed Python scripts to automate analysis of network traffic logs, reducing manual review time by 40%.
- **Anomaly Detection:** Applied statistical modeling (Pandas, NumPy) to identify 15% more potential security incidents vs. legacy methods.

Junior Teaching Assistant

Feb 2024 – Jan 2025

Nile University

Giza, Egypt

- **Programming Instruction:** Mentored 30+ students in HTML/CSS/JavaScript, improving average assignment scores by 20%.
- **Discrete Mathematics Support:** Simplified abstract concepts (graph theory, combinatorics) for 60 students, resulting in a 15% rise in exam pass rates.
- **Logic Design Tutoring:** Guided 25+ students in Boolean algebra/circuit design; weekly review sessions boosted midterm grades by 30%.

Education

Bachelor of Science in Computer Science

Oct 2022 – Present

Nile University 📄

Giza, Egypt

- **Expected Graduation** Jun 2026
- **Current Cumulative GPA:** 3.7
- **Relevant Coursework:**
 - **Data Science & AI:** Data Structures & Algorithms, Machine Intelligence, Big Data, Data Analysis, Database Systems.
 - **Mathematical Foundations:** Calculus I-III, Linear Algebra, Probability & Statistics, Discrete Mathematics, Differential Equations.

Thanweya Amma

Oct 2020 – Jun 2022

Wiseness Language School 📄

Giza, Egypt

Skills

Programming

Python (Pandas, NumPy, Scikit-learn) | SQL | C/C++ | java

Data Science & ML

Machine Learning (Supervised/Unsupervised) | NLP (bert, transformers) | Big Data (Hadoop, Spark)

Tools

Git, Docker, AWS EMR, Tableau, MySQL/PostgreSQL

Soft Skills

Leadership | Adaptability | Communication | Problem-Solving | Collaboration

Networking & Cybersecurity

VLANs & Inter-VLAN Routing | STP & EtherChannel | IPv4/IPv6 Addressing & Routing | WLANs

Projects

ToneTune: AI Writing Assistant

Jul 2025

NLP: Transformers, BERT

- **Developed a real-time feedback tool** for academic writing, evaluating tone (BERT), readability (Flesch-Kincaid), and plagiarism (Cosine Similarity).
- **Integrated Zotero API** for citation checks; reduced citation errors by 40% in user testing.

Scalable Email Spam Detection

Feb 2025 – Jun 2025

PySpark, NLP, Hadoop

- **Engineered a distributed ML pipeline** processing 500K Enron emails, achieving **93% F1-score** (CatBoost) after NLP optimization (TF-IDF, lemmatization).
- **Reduced false positives by 25%** by integrating anomaly detection (Isolation Forest) for novel spam patterns.

NYC Traffic Congestion AI Predictor

Feb 2025 – Jun 2025

Python: XGBoost, LightGBM, Time Series Analysis

- **Predicted congestion hotspots with 95% accuracy** by fusing traffic/weather data (5-year NYC OpenData) and ensemble modeling.
- **Automated trend reports** with Plotly dashboards; insights reduced simulated emergency response times by 15%.
- **Optimized hyperparameters** via stratified K-fold CV, improving model robustness by 12%.

Emotica: Emotional Health Tracker

Feb 2025 – Jun 2025

MySQL, Python, GUI Development

- **Designed BCNF-normalized database** (20+ tables) with optimized joins, reducing query time by 30%.
- **Built a CRUD GUI** generating automated wellness reports (mood correlations, triggers).
- **Validated ER diagrams** via test datasets, ensuring 99% data integrity.

Climate Impact on Connectivity & Illumination

Jan 2025

Python: Pandas, Scikit-learn, Matplotlib/Seaborn

- **Analyzed 1M+ rows** of integrated data (Ookla internet speeds, VIIRS nighttime lights, NOAA weather) to model climate effects on infrastructure.
- **Boosted predictive accuracy by 18%** vs. baseline (Random Forest) by feature engineering temporal weather patterns.
- **Designed 10+ interactive visualizations** (heatmaps, scatter plots) to communicate insights to policymakers; identified 3 high-risk regions for infrastructure upgrades.

Extracurricular

PhiloSci - Research Club

Jan 2025 – Present

Vice President

Giza, Egypt

Book Club

Oct 2024 – Present

Book Master Committee Member

Giza, Egypt

Trojan Club


2024 – Dec 2024

Junior Mentor


Giza, Egypt

Certificates

ICPC - International Collegiate Programming Contest
(2023, 2024 ECPC Qualifications)

CCNA: Introduction to Networks 
(2025)

AI Engineer - Google Development Club 
(2025)

CCNA: Switching, Routing, and Wireless Essentials 
(2025)

Languages

- Arabic
- English