

# Menna Allah Ashraf Saad

## Communications & Electronics Engineer | RAN Planning, Optimization & Automation

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### Professional Summary

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Graduated from Mansoura University in Communications & Electronics Engineering with Distinction with Honours (A+, 90.9%, top 20 of cohort). Completed an intensive 4-month industry fellowship at the National Telecommunication Institute (NTI), pairing 420 hours of telecom laboratory work with on-site corporate deployment in end-to-end mobile network planning, RF optimization, 5G Standalone, Open RAN, and AI-driven automation. Gained extensive hands-on experience calculating link budgets, conducting drive-test diagnostics (Atoll, TEMS, Actix), deploying Kubernetes cloud RAN, and writing Python automation scripts for network operations.

### Experience

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#### Telecom & Network Automation Engineer (Fellowship) - National Telecommunication Institute (NTI) | Oct 2026 - Present

4-month intensive technical and lab track (420 hours) paired with corporate internship

- Calculated link budgets across legacy and NR bands (RSRP, RSRQ, SINR); performed cluster design, site placement, and Monte Carlo capacity simulations in Atoll; analyzed TEMS Discovery and Actix drive-test logs to resolve coverage holes, pilot pollution, and overshooting.
- Analyzed the 5G Service-Based Architecture and gNB CU/DU functional splits; mapped 3D Massive MIMO beam patterns and configured eMBB and URLLC network slices (NSSAI, 5QI).
- Troubleshoot LTE Attach, 5G SA Registration, NGAP, NAS, and RACH flows in Wireshark; evaluated VoNR SIP signaling, latency budgets, and MOS.
- Deployed O-RAN 7-2x splits (O-CU, O-DU, O-RU) over eCPRI; managed Near-RT and Non-RT RIC with xApps/rApps; containerized and scaled vBBUs on Kubernetes.
- Wrote Python (Pandas, NumPy) scripts that parsed OSS PM counters and CDRs to detect worst-performing cells; automated parameter changes via REST APIs; built ML traffic-prediction models for energy saving.
- Designed an end-to-end 5G SA/O-RAN smart-city network with closed-loop traffic steering and dynamic slicing for industry presentation.

#### Graduation Project Team Leader - Smart Elderly Health Monitoring System | 2024 - 2025

Faculty of Engineering, Mansoura University - Grade: A+ (Distinction with Honours)

- Designed and deployed a real-time IoT platform integrating heart-rate, body-temperature, and SpO2 sensors with microcontrollers.
- Built a Python anomaly-detection pipeline for real-time risk monitoring and automated caregiver alerts.
- Led the team across hardware prototyping, firmware development, ML integration, and final academic examination.

## Education

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### Bachelor of Science in Communications & Electronics Engineering | 2020 - 2025

Faculty of Engineering, Mansoura University, Egypt — Cumulative Grade: A+ (90.9%, 6818/7500), Distinction with Honours; ranked in the top 20 of the graduating cohort.

## Skills

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- **RAN & Standards:** 2G GSM/GPRS/EDGE, 3G UMTS/HSPA, 4G LTE/LTE-A Pro, 5G SA/NSA, O-RAN, Massive MIMO, Beamforming, VoNR, Network Slicing (eMBB, URLLC)
- **RF Planning & Optimization:** Link Budget, Drive Test & Post-Processing, Coverage & Capacity Optimization, Handover Tuning, Worst Cell Analysis, Interference (PIM), Atoll, TEMS Discovery, Actix Analyzer
- **Protocols & Interfaces:** 3GPP Rel. 15-18, S1, X2, N1-N4, eCPRI (7-2x), O1, E2, Wireshark (NGAP, NAS, SIP)
- **Cloud, Virtualization & AI:** Python (Pandas, NumPy, Matplotlib, Scikit-learn), REST APIs, JSON, Docker, Kubernetes (vRAN/vBBU), RIC (xApps/rApps), LSTM Forecasting
- **Hardware & Embedded:** Circuit Design, Microcontrollers, Sensor Interfacing, IoT Prototyping, Antenna Simulation & Fabrication (Microstrip, Patch, Dipole)
- **Professional:** Business English, Project Scope & Schedule Management, Root Cause Analysis, Technical Presentation, Leadership

## Certifications & Training

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- Telecom Engineering Track (2G, 3G, 4G LTE, 5G SA/NSA) - Trust Academy, Eng. Waleed Elsafori (2024)
- Practical Antenna Design: Theory, Simulation & Fabrication (80 hours) - Electronics Research Institute (2023)
- Telecommunications Engineering (30 hours) - Radio and TV Institute (2023)
- English for Engineering (30 hours) - AUC (2022) | Employability Skills Track - Aspire / USAID / AUC (2022)

## Honours & Activities

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- Finalist, IEEE Victoris 2.0 Micromouse Competition - NTRA-sponsored national robotics competition (2023)
- Most Active Volunteer, IEEE Mansoura Student Branch, Computer Society - Flutter Committee (2022)
- Active Member Appreciation Award, IEEE Mansoura (2022-2023) | Volunteer, 3rd JEPE Engineering Exhibition (2022)