

ZIYAD AHMED HASHEM

Medical Equipment Specialist | Medical Devices Engineer

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PROFESSIONAL SUMMARY

Medical Equipment Specialist and Medical Devices Engineer, a 2026 graduate of Beni Suef University, with 14+ months of hands-on clinical training completed inside Beni Suef University Hospital across six departments: Intensive Care, Operating Rooms, Radiology, Blood Bank, Physiotherapy, and General Wards. Experienced in preventive and corrective maintenance, calibration, and electrical safety testing on equipment from major manufacturers such as Siemens Healthineers, GE HealthCare, Philips, Dräger, Mindray, and Fresenius Kabi, and used to coordinating directly with medical device vendors and distributors in the Egyptian market. Equally comfortable with hands-on technical work and client-facing conversations, a combination built over a decade in a family trading business and through an independently run freelance service practice. Currently extending that range into data-driven equipment management through a parallel Data Engineering and AI government scholarship. Open to roles in clinical engineering, technical sales, maintenance, or field service.

EDUCATION

B.Sc., Biomedical Equipment Technology

2026

Beni Suef University, Faculty of Applied Health Sciences Technology

Beni Suef, Egypt

GPA of 3.2 out of 4.0 (B+), ranking among the top 7 students in the department.

Relevant coursework: Biomedical Equipment I & II, Medical Electronics, Medical Imaging Equipment, Clinical Laboratory Instrumentation, Fault Detection & Preventive Maintenance, Quality Management in Medical Equipment Technology, Clinical Engineering & Health Care Organization, Mechatronics Engineering.

CORE SKILLS

Biomedical & Clinical Engineering: Preventive and corrective maintenance, fault diagnosis and troubleshooting, calibration and performance verification, electrical safety testing, installation, commissioning, and acceptance inspection.

Equipment & Industry Knowledge: Working familiarity with 20+ global manufacturers across imaging, critical care, laboratory, OR, and physiotherapy equipment, plus a working knowledge of Egypt's medical device distribution channels and major local suppliers.

Technical Sales & Client Relations: Vendor and distributor coordination, price negotiation, supplier and client relationship management, cross-departmental and stakeholder communication, bilingual Arabic/English.

Test Equipment & Embedded Systems: Multimeter, oscilloscope, and electrical safety analyzer; Arduino and ESP32 firmware development, circuit design and PCB fabrication, MATLAB/Simulink, LabVIEW.

Data & Digital Tools: Python, SQL, Microsoft Azure cloud data services, Apache Spark, Docker, Git, plus Microsoft Excel, PowerPoint, and Word.

CLINICAL & HOSPITAL EXPERIENCE

Biomedical Equipment Engineering Trainee

Aug 2024 – Jun 2026

Beni Suef University Hospital, Biomedical Engineering Department

Beni Suef, Egypt

Four supervised rotations totaling 14+ months, across Intensive Care, Operating Rooms, Radiology, Blood Bank, Physiotherapy, and General Wards.

- Preventive maintenance:** carried out scheduled PM cycles across all six departments per manufacturer guidelines and hospital protocol, completing checklists and logging service records ahead of every return to clinical use.
- Fault diagnosis and corrective maintenance:** worked alongside senior biomedical engineers to trace hardware faults to the component level using multimeters and oscilloscopes, then carried out the repair.
- Calibration and performance verification:** checked alarm thresholds, output parameters, and sensor accuracy against manufacturer specification, with particular focus on infusion and syringe pumps and patient monitors.
- Electrical safety testing:** ran IEC 62353 safety checks covering earth leakage current, insulation resistance, and ground continuity, using dedicated safety analyzers before equipment was returned to patient use.
- Installation and commissioning:** supported unboxing, assembly, configuration, and acceptance testing of newly procured equipment, coordinating directly with vendor field engineers and distributor representatives during handover.
- Documentation and clinical coordination:** maintained maintenance logs and device history records, and communicated equipment status and downtime directly to physicians, nurses, and lab technicians.
- Vendor and distributor exposure:** regular contact with Egyptian medical device distributors and agents, including Alkan Medical, EGMED, Alfa Healthcare, and Life Care Technology, during procurement, installation, and after-sales service visits.

Devices Handled, by Department:

Critical Care: Ventilators (Dräger Evita, GE HealthCare Engström), patient monitors and central monitoring stations (GE HealthCare CARESCAPE, Philips IntelliVue, Mindray), infusion and syringe pumps (Fresenius Kabi Agilia, B. Braun, BD Alaris), defibrillators, neonatal incubators.

Radiology & Imaging: CT scanners, digital X-ray (fixed and mobile), C-arm fluoroscopy, angiography/DSA (Philips Allura), ultrasound (Siemens Acuson, GE HealthCare LOGIQ, Esaote MyLab), PACS workstations, working awareness of MRI safety procedures.

Operating Room: Anesthesia machines (GE HealthCare Avance/Carestation), electrosurgical units (Erbe VIO), endoscopy and laparoscopy (Olympus, Karl Storz), autoclaves and sterilizers (Tuttnauer), OR tables and surgical lighting.

Laboratory & Blood Bank: Hematology and coagulation analyzers (SYSMEX), clinical chemistry and immunoassay (Abbott Alinity), centrifuges (Beckman Coulter, Eppendorf), blood-bank refrigeration and storage units.

Physiotherapy & General Wards: Therapeutic ultrasound, TENS/EMS/IFC units, short-wave diathermy and laser therapy (BTL, Enraf-Nonius), traction units, pulse oximeters (Masimo), portable ECG, blood glucose meters, hospital beds.

GRADUATION PROJECT

V.E.N.O.U.S.: Clinical-Grade Syringe Pump Aug 2025 – Jun 2026
B.Sc. Graduation Project, Faculty of Applied Health Sciences Technology, Beni Suef University
A 15-member team project, supervised by Dr. Mohamed Ali Hussein.

- Led the software and mobile-application side of a syringe pump built and refined across three progressive hardware generations, moving from an Arduino-based prototype with keypad and LCD, to an ESP32 touchscreen interface, and finally to a dual-channel system with Bluetooth wireless control.
- Built the companion mobile app in Flutter, communicating with the pump over Bluetooth, with PIN-protected access, a bilingual Arabic/English interface, and a live operation log for troubleshooting.
- Ran calibration and flow-accuracy tests across the pump's full operating range and benchmarked its performance against commercial references, including the B. Braun Perfusor Space, Fresenius Kabi Agilia SP, and Mindray BeneFusion nSP.
- Independently designed and tested a pulse-oximeter build as a side project (MAX30100/MAX30102 sensor, Beer–Lambert oxygen-saturation algorithm), validating its readings against a reference clinical device.
- Authored the full technical project book, including circuit schematics, firmware documentation, and calibration data, and presented the finished system to the faculty evaluation committee.

CERTIFICATIONS & TRAINING

Data Engineering & AI Scholarship, Digital Egypt Pioneers Initiative (DEPI) Nov 2025 – Jul 2026
Ministry of Communications & Information Technology, Egypt. Delivered by AMIT Learning.

- Government-funded, 120-hour program in data engineering and AI covering Python, SQL, cloud data services on Microsoft Azure, distributed processing with Apache Spark, and pipeline orchestration, working toward Microsoft's Azure data engineering certification track.
- Delivered “Kemet Analytics,” an end-to-end capstone data platform analyzing millions of real-world NYC transportation trip records, using a containerized microservices architecture with automated pipeline orchestration and an interactive dashboard.
- Completed the program's freelance-readiness track by closing 3 paid client engagements, combined value \$300 USD, through real freelance-platform work as a required professional-development milestone.

LEADERSHIP & ORGANIZATIONAL EXPERIENCE

Student Union, Medical Devices Section 2022 – 2025
Faculty of Applied Health Sciences Technology, Beni Suef University

- **Medical Devices Section Coordinator (2024–25):** managed scheduling and examination logistics for 200+ students and acted as the main point of contact between the student body and faculty administration.
- **Scientific Committee Supervisor (2023–24):** led the faculty's team through a university-wide academic competition to a 4th-place finish, and organized the faculty's new-student welcome day.
- **Union Member (2022–23):** took part in campus health-awareness campaigns and competed in the faculty chess tournament, placing 3rd.

ADDITIONAL EXPERIENCE

Sales, Operations & Trade Coordinator 2010 – 2021
Family Poultry & Livestock Trading, Beni Suef, Egypt

- Grew into a working role over a decade in the family trading business, sourcing and negotiating with suppliers across Upper Egypt, managing inventory and inter-governorate logistics, and building recurring buyer relationships in Cairo-area markets, with growing responsibility from 2015 onward.

Independent Freelance Service Business

- Runs an ongoing freelance practice spanning CV writing and LinkedIn profile optimization, presentation design, Excel-based data solutions, Arabic-English translation, and chatbot/automation builds (ManyChat, integrated with Google Sheets as a lightweight CRM), managing the full client relationship from outreach through delivery across several Arabic and international freelance platforms.