

ABDULLAH HEMDAN

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PROFESSIONAL SUMMARY

Biomedical Engineer and graduate student seeking internship/working student positions in medical software development, clinical engineering, and healthcare technology. Offering 2+ years of hands-on experience with ventilators, patient monitors, and diagnostic equipment, combined with strong programming skills (Python, MATLAB, C++, SQL). Demonstrated success optimizing medical device performance through custom software solutions, data analysis, and preventive maintenance protocols. Track record of reducing service response time by 40% and improving device accuracy by 30%. Committed to applying technical expertise and project management skills to advance healthcare innovation and patient care technology solutions.

PROFESSIONAL EXPERIENCE

Biomedical Engineer

September 2021 - January 2023

AM Medical Co.

Cairo, Egypt

- Managed maintenance and calibration for 25+ critical medical devices including Bennett ventilators, Mindray anesthesia machines, Philips catheter devices, and Valley Lab diathermy systems, ensuring 99.9% operational uptime and full FDA/ISO 13485 compliance
- Implemented systematic diagnostic protocols using Python-based monitoring software, reducing service response time by 40% and resolving 95% of technical issues within 24 hours across 15+ healthcare facilities
- Developed and delivered 12 technical training programs for 80+ medical professionals on equipment operation, troubleshooting, and maintenance, resulting in 60% reduction in user-error device malfunctions
- Created custom MATLAB-based performance monitoring dashboard that tracked 20+ device parameters, enabling proactive maintenance that improved equipment lifespan by 25%

Laboratory and Operating Room Department Intern

July 2019 - August 2019

Al-Safa Hospital

Giza, Egypt

- Processed 150+ laboratory samples using automated analyzers and compiled research data using SQL database integration, improving sample processing efficiency by 15%
- Conducted daily quality control inspections on 20+ critical medical devices including Abbott laboratory systems and Dräger anesthesia machines, identifying 8 potential device failures before patient impact
- Assisted in implementing electronic documentation system for medical equipment maintenance, reducing paperwork by 30% and improving compliance tracking

Endoscopy Equipment Intern

May 2019 - June 2019

Medical Leadership Co.

Giza, Egypt

- Mastered operation and maintenance procedures for 10+ Olympus and Karl Storz endoscopy equipment models through 40 hours of hands-on training, supporting 15 clinical demonstrations
- Developed troubleshooting guideline document for common endoscopy equipment issues, reducing diagnostic time by 20% for technical staff

Hemodialysis and Sterilization Technology Intern

August 2018 - September 2018

Cairo University Hospital

Giza, Egypt

- Assisted in operating and monitoring 8 Fresenius hemodialysis machines serving 40+ patients weekly, maintaining treatment parameter accuracy of 98%
- Conducted 25+ sterilization cycles with STERIS and Getinge industrial autoclaves, ensuring 100% sterility compliance for critical surgical instruments
- Participated in validation testing of new dialysis water purification system, collecting and analyzing data that informed equipment procurement decisions

EDUCATION

Hochschule Anhalt <i>Master of Science in Biomedical Engineering</i>	2024 - Present <i>Köthen, Sachsen-Anhalt, Germany</i>
<ul style="list-style-type: none">– Specialized in Medical Software Development, Healthcare IoT, and Advanced Biomedical Instrumentation– Core coursework: Medical Device Software Validation, Clinical Engineering Management, Healthcare Data Analytics	
Higher Institute of Engineering <i>Bachelor of Engineering in Biomedical Engineering</i>	2016 - 2021 <i>El-Shorouk, Cairo, Egypt</i>
<ul style="list-style-type: none">– Graduated with 70% overall average and 90% in final project focused on Augmented Reality in Medical Education developed using Unity– Key coursework: Biomedical Signal Processing, Medical Electronics, Embedded Systems for Medical Applications, Medical Device Troubleshooting	

TECHNICAL SKILLS

Medical Devices: Installation, calibration, and troubleshooting of Bennett ventilators, Mindray anesthesia machines, Philips catheter devices, Valley Lab diathermy systems, Fresenius dialysis machines, STERIS/Getinge sterilization systems
Software Development: Python (3+ years, NumPy, Pandas, PyQt), MATLAB (4+ years, Signal Processing Toolbox), C/C++ (2+ years), SQL (PostgreSQL, MySQL), Unity 3D for medical simulations and AR applications
Embedded Systems: Medical device firmware programming, microcontroller interfacing, real-time systems, sensor integration, medical IoT devices
Data Analysis: Biomedical signal processing, statistical analysis, performance monitoring, diagnostic algorithms, predictive maintenance, 30%+ accuracy improvements
Medical Standards: ISO 13485, IEC 62304 (Medical Device Software), FDA QSR compliance, HIPAA/GDPR for healthcare data
Troubleshooting: Systematic fault diagnosis, electronic circuit repair, electromechanical systems analysis, preventive maintenance protocols
Project Management: Medical device implementation, Agile methodologies, JIRA, MS Project, cross-functional team coordination, 25% efficiency improvements
Languages: Arabic (Native), English (B2-C1), German (A2-B1, actively improving)

CERTIFICATIONS

Technical: Python for Medical Device Programming (Advanced, 2022), Embedded Systems Engineering for Medical Applications (120 hrs, 2019), Medical Electronics Design (2018)
Software: Healthcare Database Management & SQL (2022), Medical Data Visualization with Python & Tableau (2022), IEC 62304 Medical Software Development (2023)

PROFESSIONAL MEMBERSHIPS

VDE DGBMT - German Society for Biomedical Engineering (2024-Present)
Egyptian Engineering Syndicate - Biomedical Engineering Division (2021-Present)