EHAB YOSRY MOHAMED TAWFIK

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OBJECTIVE

Dynamic and results-oriented Senior IoT Engineer with a proven track record in designing, implementing, and optimizing innovative Internet of Things (IoT) solutions. Seeking a challenging position where my extensive experience in the field, coupled with a passion for cutting-edge technologies, can contribute to the development and execution of advanced IoT projects. Adept at collaborating with cross-functional teams, I aim to drive efficiently, enhance system performance, and pioneer advancements in the rapidly evolving landscape of IoT. My goal is to leverage my technical expertise and leadership skills to deliver scalable and robust IoT solutions that address real-world challenges and contribute to organizational success.

SKILLS AND ABILITIES

- **Hardware Design:** Proficient in designing and developing hardware solutions for IoT devices, encompassing schematic design, PCB layout, component selection, and prototyping.
- **Microcontroller and Microprocessor Systems:** Expertise in working with various microcontroller and microprocessor architectures, such as ARM, AVR, or others, for embedded systems in IoT devices.
- **Sensor Integration:** In-depth knowledge of integrating a variety of sensors, including environmental, motion, and biosensors, into IoT hardware designs.
- **Low-Power Design:** Skillful in optimizing IoT devices for low-power consumption, extending battery life and improving overall energy efficiency.
- **Communication Interfaces:** Proficient in designing communication interfaces, including UART, SPI, I2C, and wireless protocols (e.g., Bluetooth, Zigbee, LoRa).
- **Power Supply Design:** Experience in designing efficient power supply circuits, considering the power requirements and constraints of IoT devices.
- **Signal Integrity and EMC/EMI Compliance:** Ensuring signal integrity in high-speed designs and addressing Electromagnetic Compatibility (EMC) and Electromagnetic Interference (EMI) compliance.
- **Prototyping and Testing:** Hands-on experience with hardware prototyping and testing methodologies, including the use of oscilloscopes, logic analyzers, and other testing equipment.
- **Firmware Interaction:** Collaboration with firmware developers to ensure seamless interaction between hardware and software components of IoT devices.
- **Design for Manufacturability (DFM):** Consideration of manufacturing processes and cost-effective design practices for scalable production.
- **Documentation:** Strong documentation skills for creating clear and comprehensive design specifications, test plans, and manufacturing instructions.
- **IoT Architecture:** Design and implement end-to-end IoT solutions, understanding the integration of sensors, devices, communication protocols, and cloud platforms.
- **Embedded Systems:** Proficient in developing and programming embedded systems for IoT devices.

- **Communication Protocols:** In-depth knowledge of various communication protocols such as MQTT, HTTP, and others.
- **Security**: Implement robust security measures to protect IoT ecosystems from cyber threats and vulnerabilities.
- **Data Management:** Expertise in handling and managing large volumes of IoT-generated data, including storage, processing, and analytics.
- **Networking: Strong** understanding of networking concepts and protocols, including TCP/IP, UDP, and network configuration.
- **Programming Languages:** Proficient in programming languages commonly used in IoT development, such as Python, C, C++, and JavaScript.
- **Machine Learning:** Knowledge of machine learning algorithms can enhance predictive analytics and decision-making in IoT applications.
- **Project Management:** Ability to lead and manage IoT projects from conception to completion, including resource allocation, timelines, and deliverables.
- **Interdisciplinary Collaboration:** Effective communication and collaboration with cross-functional teams, including hardware engineers, software developers, and data scientists.
- **Troubleshooting and Debugging:** Strong problem-solving skills to identify and resolve issues in IoT systems efficiently.

DEVELOPMENT TOOLS, CAD SOFTWARE, AND PROGRAMMING LANGUAGES SKILLS

- Python programming language
- SQL
- MSSQL server
- Linux
- NoSQL
- MongoDB
- Node Red
- NodeMCU
- C programming language
- C++ programming language
- Mosquitto broker
- MQTT
- Modbus
- Firebase
- Version control
- GitHub
- Embedded real-time operating systems.
- AutoCAD
- Fusion 360
- Proteus
- KiCAD

INDUSTRIAL AUTOMATION AND CONTROL SYSTEMS SKILLS

- **PLC (Programmable Logic Controller) Programming:** Proficient in programming PLCs for controlling and automating industrial processes.
- **HMI (Human-Machine Interface) Design:** Experience in designing user-friendly HMIs that allow operators to interact with and monitor   industrial systems.
- **SCADA (Supervisory Control and Data Acquisition):** Knowledge of SCADA systems for real-time monitoring, data collection, and control of industrial processes.
- **DCS (Distributed Control System):** Familiarity with DCS, which involves distributed control units for managing complex industrial processes across different locations.
- **Industrial Networking:** Understanding of industrial communication protocols such as Modbus, Profibus, and Ethernet/IP for efficient data exchange between devices.
- **Instrumentation and Sensors:** Knowledge of various sensors and instruments used to measure and control parameters like temperature, pressure, flow, and level.
- **Motion Control Systems:** Experience in designing and implementing systems for precise control of motion, often used in manufacturing and robotics.
- **Robotics Integration:** Integration of robotic systems into industrial processes for tasks like material handling, assembly, and welding.
- **Industrial Safety Systems:** Understanding of safety systems, including emergency shutdown systems and safety instrumented systems, to ensure a safe working environment.
- **PID Control (Proportional-Integral-Derivative):** Proficiency in implementing PID control algorithms for precise regulation of industrial processes.
- **Troubleshooting and Debugging:** Ability to troubleshoot and debug control systems, identifying and resolving issues to ensure smooth operation.
- **Industrial Data Analytics:** Utilizing data analytics tools to derive insights from industrial data for process optimization and predictive maintenance.
- **Industrial IoT (IIoT) Integration:** Integration of IIoT technologies for improved connectivity, data exchange, and remote monitoring of industrial equipment.
- **Cybersecurity Awareness:** Understanding of industrial cybersecurity principles to protect control systems from cyber threats.

LANGUAGES

English	Arabic	French
Professional	Mother tongue	Intermediate

➢ Senior R&D IoT Engineer   3/2024 – 12/2024

iRobotic - Cairo, Egypt | Current Position

As a Senior R&D IoT Engineer at iRobotic Company, I spearhead the development of innovative IoT solutions, driving the company's mission to deliver cutting-edge technology. IROBOTIC is dedicated to creating advanced IoT products that enhance connectivity, efficiency, and automation in various industries.

- o **Responsibilities:**
  - **Requirement Analysis:** Conducting thorough analyses of project requirements to ensure the delivery of tailored IoT solutions.
  - **Product Requirements Document**: Preparing detailed PRDs to outline the functional and technical requirements of IoT products.
  - **Hardware System Architecture**: Designing robust hardware architectures that form the backbone of IoT systems.
  - **Hardware Design**: Developing detailed schematics and PCB layouts for IoT devices, ensuring high performance and reliability.
  - **Software Design:** Crafting comprehensive software integration architectures, flowcharts, and detailed test cases and scenarios to guarantee seamless software functionality.
  - **Process Flow Diagrams**: Creating process flow diagrams to map out the operational workflows and ensure clarity in system processes.
  - **Technical Studies:** Performing in-depth technical studies for hardware component selection, including defining technical specifications and conducting market research.
- o **Technical Expertise:**
  - Proficiency in hardware design and development, from initial concept through to production.
  - Strong knowledge of IoT connectivity protocols and cloud-based solutions.
  - Expertise in software integration and architecture design.
- o **Key Accomplishments:**
  - **Innovative IoT Solutions**: Led the development of advanced IoT solutions that significantly improved operational efficiency for various clients.
  - **Technical Leadership:** Provided mentorship and technical guidance to junior engineers, fostering a collaborative and innovative team environment.
  - **Market Research:** Conducted comprehensive market research to inform the selection of optimal hardware components, ensuring the highest quality and performance standards.
  - **Client Impact**: Delivered IoT solutions that resulted in substantial improvements in efficiency, cost savings, and operational excellence for clients

In my role at IROBOTIC, I have been instrumental in pushing the boundaries of IoT technology, contributing to the company's reputation as a leader in innovative IoT solutions. Through strategic planning, technical expertise, and a commitment to excellence, I have played a key role in advancing IROBOTIC's mission to revolutionize the IoT landscape.

➢ **Senior IoT Engineer & Team Leader (part time)**   9/2023 – 7/2024

    Tatbeek - Cairo, Egypt

As the Senior IoT Engineer and Team Leader at Tatbeek, I lead a dynamic team in the development and implementation of cutting-edge IoT solutions as part of our integrated business offerings. Tatbeek, an ICT company with a focus on digitalization, operates with a vision for a world with high efficiency and a mission to continually innovate and enhance the efficiency and performance of businesses globally.

   o **Responsibilities:**
      - **Team Leadership:** Directing and mentoring a team of IoT engineers in the design, development, and deployment of comprehensive IoT solutions.
      - **Project Management:** Overseeing end-to-end project lifecycles, ensuring timely delivery and adherence to quality standards.
      - **Solution Architecture:** Collaborating with cross-functional teams to architect IoT solutions that align with clients' needs and Tatbeek's mission.

   o **Technical Expertise:**

   Applying in-depth knowledge of IoT technologies, including hardware design, connectivity protocols, and cloud-based solutions.

      - **Client Interaction:** Engaging with clients to understand their business requirements, providing expert consultation, and ensuring client satisfaction.
      - **Innovation**: Driving innovation within the team, exploring emerging technologies, and incorporating them into Tatbeek's suite of digital solutions.
      - **Collaboration:** Fostering a collaborative environment within the team and across departments to achieve cohesive and integrated IoT solutions.
   o **Key Accomplishments:**
      - **IoT Solution Development:** Led the successful development of IoT solutions tailored for diverse industries, enhancing operational efficiency, and automating key processes.
      - **Team Empowerment:** Implemented training programs and skill development initiatives, resulting in an empowered and highly skilled IoT engineering team.
      - **Strategic Partnerships:** Forged strategic partnerships with key industry players to enhance Tatbeek's capabilities and broaden the scope of IoT solutions offered.
      - Project Delivery Excellence: Ensured the successful and timely delivery of complex IoT projects, meeting, or exceeding client expectations.
      - **Client Impact:** Orchestrated the implementation of IoT solutions for clients, resulting in substantial improvements in efficiency, cost savings, and operational excellence.
      - **Continuous Improvement:** Instituted processes for continuous improvement in IoT solution design, development, and deployment, aligning with Tatbeek's mission for innovation.

In this leadership role, I have been instrumental in steering Tatbeek towards achieving its mission of maximizing efficiency and performance through innovative and smart solutions. Through strategic leadership, technical expertise, and a commitment to client success, I have contributed to Tatbeek's position as a leading ICT company in the realm of digitalization.

➢ Asset management consultant & IoT engineer   3/2023 – 3/2024.
   The Arab contractors facility management (ACFM) - Cairo, Egypt

As an IoT Engineer at The Arab Contractors for Facility Management, I play a pivotal role in advancing the company's mission of providing innovative Facility Management solutions since 1994. A subsidiary of The Arab Contractors - Osman Ahmed Osman, ACFM has a distinguished track record in delivering Operation & Maintenance solutions to utility sectors and critical facilities.

- o **Responsibilities:**
  - **IoT Solution Development:** Spearheading the design and implementation of IoT solutions tailored for facility management, enhancing operational efficiency and predictive maintenance.
  - **Sensor Integration:** Integrating a variety of sensors and devices to monitor and collect data from critical infrastructure, ensuring optimal performance and minimizing downtime.
  - **Data Analytics:** Utilizing advanced data analytics to derive actionable insights from IoT-generated data, contributing to informed decision-making for facility management strategies.
  - **Remote Monitoring:** Establishing and managing remote monitoring systems, enabling real-time surveillance and control of critical assets to ensure uninterrupted facility operations.
  - **Collaboration**: Collaborating closely with cross-functional teams, including facility managers, IT professionals, and maintenance staff, to implement cohesive IoT solutions.
  - **Innovation and Continuous Improvement:** Driving innovation by exploring and implementing emerging technologies in IoT, and leading initiatives for continuous improvement in facility management processes.
- o **Key Accomplishments:**
  - **IoT-Based Vibration Sensor: Successfully developed and deployed an IoT-enabled vibration sensor for real-time monitoring, facilitating early detection of equipment anomalies and reducing downtime.**
  - **Comprehensive Facility Monitoring Solution:** Led the design and deployment of a comprehensive IoT-based facility monitoring solution, providing real-time insights into critical infrastructure, improving overall operational efficiency.
  - **Predictive Maintenance Implementation:** Designed and implemented a predictive maintenance system using IoT technologies, resulting in a substantial decrease in maintenance costs and improved equipment reliability.
  - **Strategic Expansion Initiatives:** Contributed to strategic initiatives aimed at expanding ACFM's business footprint in the Middle East region and Africa, aligned with the company's commitment to sustainable development projects.
  - **Client Satisfaction:** Played a key role in ensuring client satisfaction by delivering state-of-the-art IoT solutions, aligning with clients' aspirations and interests, and positioning ACFM as a leading Facility Management company in Egypt.

In this role, I have been instrumental in leveraging IoT technologies to enhance the Facility Management services provided by ACFM. Through innovative solutions and a commitment to client satisfaction, I have contributed to the company's success and its ongoing mission to support sustainable development projects in Egypt and beyond.

➤ **Industrial IoT engineer**   10/2022 – 3/2023

      Infinity Electric - Cairo, Egypt

As an IoT Engineer at Infinity Electric, I lead the charge in delivering cutting-edge IoT solutions as part of our comprehensive automation services. Infinity Electric is a key player in providing turnkey integrated solutions based on PLC, HMI, SCADA, and various motion control technologies, catering to diverse industries such as manufacturing, food and beverage, water, and wastewater, pharmaceutical, metal, paper pulp, plastics, and textiles.

- o **Responsibilities:**
    - **Customized IoT Solutions:** Lead the design and implementation of tailored IoT solutions, integrating seamlessly with PLC, HMI, and SCADA systems for diverse industrial applications.
    - **Sensor Integration and Data Analytics:** Implement a variety of sensors for real-time data acquisition, employing advanced analytics to optimize processes and facilitate data-driven decision-making.
    - Industrial Networking: Develop robust industrial networking solutions to ensure efficient communication between IoT devices and control systems.
    - SCADA Collaboration: Collaborate with SCADA systems to create comprehensive solutions for monitoring and controlling industrial processes, enhancing overall system efficiency.
    - Control Panel Design and Assembly: Contribute to the design and assembly of control panels, distribution boards, MCCs, power factor correction panels, multi-pump control panels, and ATS for diverse client requirements.
    - Electronic Service Center Engagement: Work closely with the specialized electronic service center, focusing on the maintenance of automation products, including VFDs, HMIs, PLCs, soft starters, and control boards.
    - Innovation and Technology Assessment: Stay abreast of emerging IoT technologies, assessing their applicability to enhance automation solutions and maintain Infinity Electric's position as an industry leader.
- o **Key Accomplishments:**
    - **Tailored IoT Implementations:** Successfully delivered customized IoT solutions that addressed specific client needs across various industries, resulting in increased operational efficiency.
    - **Improved Monitoring and Control:** Implemented IoT-based solutions that significantly enhanced monitoring and control capabilities, optimizing production processes for clients and improving overall efficiency.
    - **Quality Control Panel Assemblies:** Contributed to the design and assembly of high-quality control panels, ensuring reliable and efficient performance in diverse industrial applications.
    - **Streamlined Maintenance Processes:** Played a pivotal role in streamlining electronic maintenance processes at the service center, reducing downtime, and extending the lifespan of automation products.
    - **Client Satisfaction:** Achieved high levels of client satisfaction by consistently delivering innovative IoT solutions aligned with the mission of efficient and effective production.

In this role, I am committed to driving innovation and maintaining Infinity Electric's vision as a market leader in the Egyptian industrial automation sector. Through customized IoT solutions and a dedication to excellence, I contribute to the company's continued success and inspire creativity in our clients and competitors.

➢ Industrial automation engineer   7/2019 – 6/2021

Egypt IAS – Alexandria, Egypt

As an Industrial Automation and IIoT Engineer at Egypt IAS, a leading establishment in the field for the past 15 years, I played a pivotal role in delivering innovative solutions that empower industrial automation across diverse sectors. The company has successfully gained the trust of international partners, representing them in the local market and extending its capabilities both within and outside Egypt.

o **Responsibilities:**
- **Industrial Automation Solutions:** Led the design and implementation of industrial automation control solutions, ranging from stand-alone components to integrated systems, catering to various industries.
- **IIoT Integration:** Spearheaded the integration of Industrial Internet of Things (IIoT) technologies, connecting intelligent devices, factories, and vehicles to enhance data collection, analysis, and sharing.
- **Collaboration and Innovation:** Collaborated with partners and customers to drive innovation, creating leading technologies and solutions to address real-world challenges in the industrial landscape.
- **Streamline IIoT Solution - STREAMLINE:** Contributed to the development and implementation of STREAMLINE, an integrated automation solution based on IIoT, offering benefits such as optimized machine operation, problem-solving within processes, cost savings, and predictive maintenance advice.
- **Client Relationship Management:** Fostered strong relationships with clients, understanding their unique requirements and providing tailored industrial automation and IIoT solutions to enhance their operational efficiency.
- **Network Expansion:** Played a role in expanding the company's network, strengthening rapid response capabilities, and ensuring a comprehensive reach across Egypt and beyond.

o **Key Accomplishments:**
- **Global Partnerships:** Facilitated and strengthened partnerships with international companies, establishing trust and positioning Egypt IAS as a reliable representative in the local market.
- **IIoT Implementation Success:** Successfully implemented IIoT solutions, contributing to enhanced data collection, analysis, and sharing, ultimately improving decision-making processes for clients.
- **STREAMLINE Solution Adoption:** Actively participated in the development and adoption of STREAMLINE, a groundbreaking IIoT-based solution that addressed specific needs in various industry sectors.
- **Operational Optimization:** Achieved significant operational optimization for clients, providing solutions that streamlined machine operation, reduced downtime, and improved overall efficiency.
- **Client Satisfaction:** Demonstrated a commitment to customer satisfaction by delivering cutting-edge industrial automation and IIoT solutions that aligned with clients' business objectives.

In this role, I was dedicated to advancing the mission of Egypt IAS by leveraging industrial automation and IIoT technologies to provide tailored solutions that offer a competitive advantage to clients. Through collaboration, innovation, and a focus on client success, I contributed to the company's reputation as a trusted leader in the industrial automation sector.

Faculty of engineering, Kafr El-Sheikh university- Egypt   9/2016- 7/2021

Bachelor's degree, Electrical engineering, and computer science.

COMMUNICATION SKILLS

- **Internal Collaboration:**
  Demonstrated strong communication skills by effectively collaborating with cross-functional teams, including engineers, project managers, and other stakeholders.
  Facilitated clear and concise communication within the team, fostering an environment of openness and idea-sharing.
- **Client Interaction:**
  - Successfully engaged with clients to understand their requirements, providing clear and articulate explanations of complex technical concepts.
  - Established and maintained positive client relationships, ensuring client satisfaction through regular updates and transparent communication.
- **Technical Documentation:**
  - Proficient in creating comprehensive technical documentation, including project reports, specifications, and user manuals, ensuring clarity and accessibility of information.
- **Presentation Skills:**
  - Conducted technical presentations for both internal teams and external stakeholders, effectively conveying complex information in a digestible format.
  - Received positive feedback on the ability to present ideas and project updates in a compelling and engaging manner.
- **Conflict Resolution:**
  - Demonstrated strong interpersonal skills in resolving conflicts and addressing challenges within the team, promoting a collaborative and supportive atmosphere.
- **Client Training:**
  - Conducted training sessions for clients on implemented solutions, ensuring that end-users have a clear understanding of system functionalities and capabilities.
- **Remote Collaboration:**
  - Adapted to and excelled in remote work environments, leveraging communication tools to maintain regular contact with team members and clients.
- **Language Proficiency:**
  - Professional in English, facilitating effective communication in multicultural and international settings.

- **Team Leadership:**
  - Led a dynamic team of professionals as team leader at Tatbeek, overseeing project execution and ensuring the team's alignment with organizational goals.
  - Provided mentorship, guidance, and support to team members, fostering a collaborative and high-performance work environment.
- **Project Management:**
  - Oversaw a cross-functional team, facilitating communication and collaboration to meet Project objectives within scope and budget.
- **Initiative Development:**
  - Demonstrated strategic thinking and vision in steering the initiative towards successful implementation and achieving desired results.
- **Change Management:**
  - Led change management efforts, effectively communicating with team members, and stakeholders to ensure a smooth transition.
  - Implemented strategies to address resistance and fostered a positive attitude towards change within the organization.
- **Innovation and Process Improvement:**
  - Championed innovation within the team by introducing and implementing [specific innovation or improvement] that resulted in [positive impact, e.g., increased efficiency, cost savings.
  - Encouraged a culture of continuous improvement, empowering team members to contribute ideas and solutions for enhanced processes.
- **Cross-Functional Collaboration:**
  - Successfully led collaborative efforts between [departments or teams], breaking down silos and fostering communication to achieve common goals.
  - Demonstrated adeptness in bridging gaps and facilitating productive collaboration across diverse functions.
- **Training and Development:**
  - Developed and conducted training programs for team members, enhancing their skills and knowledge in [specific area].
  - Played a key role in talent development, contributing to the professional growth and career advancement of team members.
- **Crisis Management:**
  - Exhibited strong leadership during times of crisis, providing direction, reassurance, and solutions to mitigate challenges and ensure business continuity.
  - Implemented crisis response plans, demonstrating resilience and adaptability in the face of unforeseen circumstances.

CERTIFICATIONS

Foundations of Project Management -Google

Smart Cities, Management of Smart Urban Infrastructures - École Polytechnique Fédérale de Lausanne

Foundations of Red Hat Cloud-native Development – RedHat

Command line in Linux – Coursera

Introduction to factory automation - Omron Automation

Database fundamentals - Information Technology Institute (ITI)

Computer network fundamentals - Information Technology Institute (ITI)

Introduction to network security - Information Technology Institute (ITI)

IoT Value Chain - Information Technology Institute (ITI)

The Principles of Writing Clean Code - Information Technology Institute (ITI)

IoT Applications Development using MasterOfThings platform - Information Technology Institute (ITI)

IoT - Maximo Introduction and Overview - IBM

IoT Network Protocols - IBM

IoT - Maximo Asset Management – IBM

Maximo Application Suite Sales Foundations - IBM