

## ARSALAN KHAN

### Electrical Electronics Engineer

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### PERSONAL SUMMARY

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Electronics Engineer with experience in industrial automation, building management systems, and interactive game systems.

I am skilled in PLC programming, SCADA systems, microcontrollers, circuit design, and troubleshooting electrical systems. Hands-on expertise in CCTV (IP & analog), access control, turnstiles, DDC panels, BACnet routers, HVAC controls, VFDs, lighting, and sound systems. Strong background in system integration, maintenance engineering, preventive troubleshooting, and optimization.

Proven ability to manage projects from design to commissioning, lead cross-functional teams, and deliver reliable, high-quality solutions. Also experienced in designing and implementing interactive puzzles and escape room experiences by combining electronics with automation.

Passionate about continuous improvement, innovation, and creating systems that perform efficiently.

### SUMMARY OF CAREER:

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- Solid foundation in Electronics Engineering with expertise in industrial automation, BMS/ELV systems, and interactive entertainment technologies.
- Skilled in PLC programming, SCADA systems, microcontrollers, circuit design, troubleshooting, and system optimization.
- Hands-on experience with CCTV (IP & analog), access control, turnstiles, DDC panels, BACnet integration, HVAC controls, VFDs, lighting, and sound systems.
- Proven ability as a Maintenance & BMS Engineer to ensure smooth operation of complex electronic setups through commissioning, preventive maintenance, and troubleshooting.
- Experienced in leading teams designing and implementing interactive puzzles and escape room systems by integrating electronics, sensors, and automation.
- Passionate about blending engineering precision with creative design to deliver immersive experiences and continuously improve system performance.

## **ELECTRICAL MAINTENANCE ENGINEER (Nov 2022 to Present)**

**Company:** Last Hour Escape Room

**Location:** Riyadh

### **Job Description:**

- Installed and commissioned CCTV systems using multiple architectures, including direct connections, IP-based networks, and field interface boxes (FIB). Integrated and configured Geutebrück VMS for video management, implemented KVM systems for remote operation, and deployed access control solutions with Azure Blu-C4. Installed and integrated turnstile systems with access control for secure entry management.
- Surveillance & Security Systems: Designed, installed, and commissioned CCTV systems, access control panels, and turnstiles, ensuring full integration with BMS.
- BMS Control & Integration: Hands-on experience with DDC panels, BACnet routers, and controller programming for HVAC, lighting, and security subsystems. Integrated third-party systems through Modbus and BACnet protocols for centralized monitoring and control.
- System Design & Development: Engineered custom interactive systems using microcontrollers, PLCs, and control modules; developed control logic and implemented field wiring, schematics, and programming.
- Operation & Maintenance: Conducted preventive and corrective maintenance systems including games devices, HVAC controls, VFD drives, AV systems, lighting controls, and security systems to ensure uptime and reliability.
- Project Execution: Led cross-disciplinary teams in project delivery from design and programming to field installation, testing, and commissioning.
- Testing & Commissioning: Performed I/O checks, functional testing, point-to-point verification, and final system commissioning to meet compliance and operational standards.
- Technical Support & Training: Delivered staff training and prepared O&M documentation covering daily operation, troubleshooting, and system optimization.
- Game Design & Implementation: Designed, installed, and implemented interactive games and escape room puzzles, integrating them with electronic controls, sensors, and automation systems to deliver immersive participant experiences.

## **ELECTRICAL AUTOMATION ENGINEER (Sep 2021 to Sep 2022)**

**Company:** Blue Rhine Industries

**Location:** DUBAI, UAE

- Maintained PLCs and VFDs to ensure efficient operation of manufacturing equipment and conveyor systems.
- Conducted routine maintenance and repairs on conveyor belts and motors to minimize downtime and improve operational efficiency.
- Diagnosed and resolved electrical issues within the manufacturing site, including maintenance of various electrical components and systems.
- Developed and implemented preventive maintenance schedules to enhance the reliability and longevity of electrical systems and equipment.
- Ensured all electrical maintenance activities adhered to safety standards and regulations, reducing the risk of accidents, and enhancing workplace safety.
- Provided technical support and training to maintenance staff on the operation and troubleshooting of electrical systems and equipment.
- Experience with various types of sensors and their integration into control systems, including temperature, pressure, flow, and level sensors.
- Strong problem-solving skills and ability to troubleshoot complex issues in control systems, including hardware and software faults.
- Proficiency in communication protocols, including Modbus, Profibus, and Ethernet, and experience in designing and implementing communication networks.
- Experience with designing, testing, and commissioning control systems in a variety of industries, including manufacturing, oil and gas, and water and wastewater.
- Strong experience in maintaining and repairing control systems, including hardware and software components, and ability to perform preventative maintenance tasks.
- Ability to work independently or as part of a team, and ability to effectively manage multiple projects with varying timelines and priorities.
- Familiarity with electrical CAD software, including Eplan and AutoCAD, and experience in creating and updating electrical schematics.
- Strong analytical and critical thinking skills, with a ability to identify and resolve complex control system issues.
- Knowledge of a variety of programming languages, including ladder logic, structured text, and sequential function chart.
- Continuous improvement mindset, with a commitment to staying current with emerging technologies and best practices in the field of electrical automation.

## **ELECTRONICS ENGINEER (Feb 2021 to June 2021)**

**Company:** National Institute of Electronics

**Location:** Islamabad

- I was in team of the development of prepaid energy meters, including the design, programming, and integration of micro-controllers.
- Designed and developed printed circuit boards (PCB) for various electronic components, ensuring high reliability and efficiency.
- Wrote and tested code for micro-controllers to ensure precise functionality and performance of energy meters.
- Conducted thorough research and selection of components to optimize performance and cost-effectiveness of electronic solutions.
- Played a role in developing new technologies and methodologies to enhance the performance and capabilities of electronic products.
- Implemented rigorous testing and validation procedures to ensure the highest standards of quality and reliability in all projects.
- Proficiency in Python programming language and its applications in electrical engineering projects, including machine learning and data analysis.
- Hands-on experience in designing, developing, and testing various types of sensors, including temperature, humidity, pressure, and motion sensors.
- Skilled in PCB design, layout, and routing, with proficiency in software tools such as Eagle, Altium, and KiCAD.
- In-depth understanding of various communication protocols, including I2C, SPI, UART, and TCP/IP, and experience in their implementation in real-world projects.
- Strong experience in embedded systems development, including programming, debugging, and testing of microcontroller-based systems.
- Excellent problem-solving skills, with a demonstrated ability to troubleshoot complex electrical and software issues.
- Proficiency in designing and implementing electrical control systems, including motor control, power management, and automation.
- Proven ability to develop and test software and hardware prototypes, as well as transitioning projects from development to production.
- Knowledge of a variety of programming languages including C, C++, and Assembly.
- Strong experience in working with development tools such as oscilloscopes, logic analyzers, and in-circuit programmers.
- Exposure to a variety of electrical components and peripherals, including microcontrollers, sensors, displays, and motor drives.
- Ability to work effectively in a fast-paced environment, delivering high-quality projects on time and within budget.

## SKILLS

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- Experience in PLC, SCADA, HMI, and DCS systems programming, commissioning, and maintenance
- Experience with DDC panels, BACnet routers, and BMS integration
- Hands-on knowledge of CCTV (IP & analog), Geutebrück VMS, access control systems (Azure Blu-C4), and turnstile integration
- Expertise in HVAC controls, VFDs, lighting control systems, and sound/AV system installation and maintenance
- System design, installation, commissioning, preventive maintenance, and troubleshooting
- Project management, team leadership, and cross-functional coordination
- Designing, installing, and implementing interactive games and escape room systems
- Analytical skills and continuous optimization
- Proficient in microcontroller programming (Arduino, ATmega, PIC)
- Strong experience in MicroPython programming
- Skilled in PCB design, layout, and routing using Eagle, Altium
- In-depth understanding of communication protocols (I2C, SPI, UART, TCP/IP) and hands-on implementation
- Embedded systems development, including programming, debugging, and testing
- Excellent problem-solving skills, with ability to troubleshoot complex electrical and software issues
- Proficiency in designing and implementing electrical control systems (motor control, power management, automation)

### ❖ Software Skills

- **PLC & Automation Tools:** Siemens TIA Portal, general PLC programming software
- **HVAC & Electrical Systems:** VFD configuration, lighting control system software
- **Project / Documentation:** AutoCAD (for wiring layouts and schematics), Microsoft Office Suite
- **SCADA / BMS:** SCADA systems, Geutebrück VMS, HMI
- **Access Control & Security:** Azure Blu-C4, KVM remote management
- **PCB Design:** Eagle, Altium Designer, KiCAD
- **Programming / Development:** MicroPython, microcontroller IDEs

### ❖ Strengths

- Strong problem-solving skills with the ability to troubleshoot complex electrical and software systems
- Highly adaptable, capable of managing multiple projects across different locations and technologies
- Strong attention to detail and commitment to delivering high-quality, reliable solutions
- Excellent leadership and team coordination skills, with experience managing cross-functional teams
- Creative mindset for designing and implementing interactive escape room and game systems
- Continuous learner, always seeking to stay updated with emerging technologies in electronics and automation
- Strong work ethic, discipline, and dedication to achieving project goals on time
- Effective communicator, able to explain technical concepts clearly to both technical and non-technical stakeholders

## **EDUCATION**

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### **Bachelor's Degree, Electrical Engineering**

University of Engineering & Technology Peshawar

Location: Peshawar, Pakistan

## **CERTIFICATES**

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- PLC and SCADA Professional, SINA Institute, Islamabad.

## **PERSONAL INFORMATION**

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Nationality: Pakistani

Current Residence: Riyadh

## **REFERENCES**

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Shall be available on demand

