OMER ELBORAY

Mechatronics Engineer

PERSONAL DETAILS

4028 Debrecen, Hungary
omer.elboray@mailbox.unideb.hu, +36203754064
Nationality: Egyptian
Website: github.com/OmerElboray
LinkedIn: linkedin.com/in/omer-elboray

PROFILE

- Aspiring Mechatronic Engineer with a strong foundation in robotics and machine design, currently pursuing studies at the University of Debrecen, Hungary. High school graduate with a 3.48 GPA. Proficient in PLC programming, electronics, and production processing. Committed to launching a successful engineering career while completing academic studies.

EDUCATION

Bachelor of Science in Mechatronic Engineering 09/2021 - 02/2025
University of Debrecen, Debrecen, Hungary
Dedicated and Highly Motivated Mechatronics Engineering Student with a Strong Foundation in Robotics and Machine Design & controlling. Currently pursuing a Bachelor of Science in Mechatronic Engineering at the University of Debrecen, Hungary. Demonstrated a deep passion for engineering from an early age, actively engaging in robotics and machine design projects since middle school.

American Diploma Highschool 09/2018 - 05/2021
Taymour American School, Alexandria, Egypt
Diligent High School Graduate with a strong academic background in scientific subjects, providing a solid foundation for further studies in Mechatronic Engineering. Graduated with a notable GPA of 3.48. High school curriculum focused on rigorous scientific subjects, including Physics I & II, Chemistry, and other scientific disciplines.

INTERNSHIPS

Mechanical Engineering Intern 06/2023 - 08/2023
Renault EG, Alexandria, Egypt

- Harmonious Expertise: As an automotive engineer, I blend theoretical knowledge with hands-on proficiency, working with over 100 vehicles to ensure maintenance and enhance performance.
- Skill Set Enrichment: This experience has cultivated a comprehensive skill set across automotive engineering, deepening my passion for innovative solutions.
- Maintenance Efficiency: Collaborated on a strategy, reducing vehicle maintenance time by an impressive 20% through teamwork with fellow engineers and interns.
- Mentorship Gratitude: Grateful to Renault for mentorship, shaping my competencies and nurturing professional growth.

SKILLS

- CAD/CAM/CAE Proficiency
- Industrial Robotics
- Circuit Design and Analysis
- PLC Programming
- Robotic Process Automation (RPA)
- Control Systems Design
- Process Optimization
- Technical Problem Solving
- Data Analysis for Engineering
- Automation System Integration

QUALITIES

- Leadership Excellence
- Effective Collaboration
- Organizational Proficiency
- Innovative Problem-Solving
- Adaptability
- Advocacy and Representation
- Effective Communication
- Attention to Detail
- Community Engagement
- Holistic Vision
- Team Player
- Flexibility
- Creativity
- Community Building

LANGUAGES

- English
- Arabic
- German

HOBBIES

- Robotics Enthusiast
- PLC Development
- Industrial Automation Exploration
- CAD/CAM/CAE Projects
- Control Systems Experimentation
- Circuit Design and Prototyping
- Continuous Learning in Engineering
- Problem-Solving Challenges in Technology
- Engineering Event Coordination
- Environmental Sustainability Projects

CERTIFICATES

SS&C Blue Prism Robotic Process Automation Professional Certificate

1. **Multifaceted Automation Proficiency:**
- Demonstrate expertise by obtaining a professional certificate that seamlessly integrates skills acquired from the PLC Developer and SS&C Blue Prism RPA courses, showcasing versatility in industrial and business automation.
2. **Holistic Automation Skill Application:**
- Apply integrated knowledge across PLC development and Blue Prism RPA, demonstrating a holistic approach to automation that spans industrial processes and business operations.
3. **Real-world Problem-Solving:**
- Showcase the ability to solve complex challenges by combining practical insights from "Become a PLC Developer" with advanced automation solutions learned in SS&C Blue Prism, positioning yourself as a resourceful automation professional.
4. **Comprehensive Expertise Validation:**
- Validate your comprehensive expertise with a professional certificate that signifies mastery in both PLC development and advanced RPA technologies, enhancing your credibility in automation-focused roles.

Autodesk Fusion 360 Integrated CAD/CAM/CAE

- **Comprehensive Fusion 360 Mastery:** Achieve proficiency in Autodesk Fusion 360, mastering its interface and capabilities for integrated CAD, CAM, and CAE tasks.
- **Precision 3D Modeling:** Learn to create intricate and precise 3D models using Fusion 360's robust set of tools, ensuring a solid foundation in computer-aided design.
- **Efficient CAM Workflow:** Explore computer-aided manufacturing (CAM) principles, generating optimal toolpaths within Fusion 360 to enhance manufacturing processes.
- **Real-world Simulation and Analysis:** Dive into computer-aided engineering (CAE) simulations, analyzing designs for real-world performance and ensuring their functionality in diverse scenarios.

Become a PLC Developer

1. **Understanding PLC Fundamentals:**
- Gain a solid foundation in Programmable Logic Controllers (PLCs), learning the basics of their architecture, programming languages, and functionality in industrial automation.
2. **PLC Programming Mastery:**
- Acquire proficiency in PLC programming languages such as ladder logic and structured text, mastering the skills needed to design, implement, and troubleshoot PLC-based control systems.
3. **Hands-On Project Experience:**
- Engage in practical, hands-on projects to apply theoretical knowledge, simulating real-world scenarios and challenges that PLC developers commonly encounter in industrial settings.
4. **Integration with Industrial Systems:**
- Explore the integration of PLCs with various industrial systems, including Human Machine Interfaces (HMIs) and sensors, ensuring a comprehensive understanding of how PLCs contribute to seamless automation processes.

Become an RPA Developer

1. **Understanding RPA Fundamentals:**
- Develop a comprehensive understanding of Robotic Process Automation (RPA), including the core concepts, tools, and methodologies that form the basis of automation in business processes.
2. **Advanced RPA Programming:**
- Acquire proficiency in RPA programming languages and platforms, mastering the skills needed to design, implement, and optimize automated workflows for improved efficiency.
3. **Real-world RPA Implementation:**
- Gain practical experience through hands-on projects, applying RPA principles to real-world scenarios to develop the ability to address diverse challenges in business process automation.
4. **Integration with Enterprise Systems:**

- Explore the integration of RPA with various enterprise systems, ensuring a comprehensive understanding of how RPA technology seamlessly integrates with existing business processes to drive automation and efficiency.

Foundations of Project Management(Google)

1. **Project Management Skills and Roles:**
- Describe project management skills, roles, and responsibilities applicable across diverse industries, highlighting the versatility and importance of these skills in various professional contexts.
2. **Project Management Life Cycle:**
- Explain the project management life cycle, detailing the stages from initiation to closure, and compare different program management methodologies to provide a comprehensive understanding of project management approaches.
3. **Organizational Structure and Culture:**
- Define organizational structure and organizational culture, illustrating how these factors impact project management dynamics. Explore how the alignment or misalignment of structure and culture can influence project success and team dynamics.

Initiating and Planning Projects (University of California)

1. **Stakeholder Identification:**
- Learn how to systematically identify and analyze project stakeholders, understanding their interests, expectations, and influence on the project.
2. **Project Manager's Role and Responsibilities:**
- Define the crucial role and responsibilities of a project manager, including leadership, communication, and decision-making skills required for successful project initiation and planning.
3. **Key Elements of a Project Plan:**
- Summarize the essential elements of a comprehensive project plan, including scope, objectives, timeline, resources, and risk management strategies.
4. **Conflict Anticipation and Resolution:**
- Anticipate common sources of conflict within a project environment and develop strategies to proactively address and resolve conflicts, fostering a collaborative and productive project team.

Work Smarter with Microsoft Word

1. **Professional Document Creation:**
- Create and maintain professional-looking reports, résumés, business correspondence, and multi-column newsletters using advanced formatting and layout techniques.
2. **Document Management and Collaboration:**
- Learn effective document management strategies, including version control and collaboration features, to streamline teamwork and ensure seamless collaboration on projects.
3. **Text and Graphic Elements:**
- Master the art of inserting and formatting text and graphic elements, ensuring documents are visually appealing and convey information effectively.
4. **Table and List Management:**
- Acquire skills in managing tables and lists, optimizing the organization and presentation of data within documents for clarity and precision.

MS Excel (MindLuster)

1. **Efficient Data Management:**
- Learn advanced techniques for efficient data entry, organization, and manipulation, harnessing the full power of Microsoft Excel for seamless data management.
2. **Formulas and Functions Proficiency:**
- Acquire proficiency in creating complex formulas and using functions, enabling you to perform intricate calculations, analyze data, and derive valuable insights.
3. **Data Visualization and Analysis:**
- Explore tools for data visualization, including charts and graphs, and develop skills in data analysis to effectively communicate trends, patterns, and key insights.

4. **Time-Saving Tips and Shortcuts:**
- Master time-saving tips and keyboard shortcuts to enhance your workflow, increasing productivity and efficiency in tasks ranging from simple data entry to complex data analysis.

Modelling and simulation of mechanical systems (Università di Napoli Federico II)

1. **Fundamentals of Modelling:** Learn the fundamental principles of modeling mechanical systems, acquiring the skills to represent complex physical systems mathematically.
2. **Simulation Techniques:** Explore simulation techniques for mechanical systems, including dynamic analysis and response predictions, to understand and predict the behavior of engineered systems.
3. **Model Validation and Verification:** Master the process of validating and verifying models, ensuring accuracy and reliability in representing real-world mechanical phenomena.
4. **Optimization Strategies:** Dive into optimization strategies for mechanical systems, discovering how to fine-tune designs and parameters for enhanced performance and efficiency.

Autonomous Aerospace Systems(Università di Napoli Federico)

1. **Foundations of Autonomous Systems:** Delve into the core principles of autonomous aerospace systems, understanding the underlying technologies and methodologies driving innovation in unmanned aerial vehicles (UAVs) and autonomous aircraft.
2. **Navigation and Control Algorithms:** Explore advanced navigation and control algorithms, learning how autonomous aerospace systems maintain stability, make decisions, and navigate complex environments.
3. **Sensor Integration:** Gain expertise in sensor integration, understanding how autonomous aerospace systems utilize various sensors for perception, obstacle detection, and environmental awareness.
4. **Safety and Regulations:** Navigate the regulatory landscape and safety considerations associated with autonomous aerospace systems, ensuring a comprehensive understanding of legal and ethical aspects in the field.

Intro to Digital Manufacturing with Autodesk Fusion 360

- **Digital Manufacturing Fundamentals:** Explore the foundational concepts of digital manufacturing, gaining insights into how Autodesk Fusion 360 transforms design concepts into tangible products.
- **Fusion 360 Interface Proficiency:** Master the use of Autodesk Fusion 360's interface specifically for digital manufacturing, learning to optimize the software for efficient and precise production workflows.
- **Prototyping and Iterative Design:** Discover the power of digital prototyping, understanding how to iterate designs seamlessly within Fusion 360 to refine and optimize products before physical production.
- **Collaborative Digital Workflows:** Learn to collaborate effectively in a digital manufacturing environment, leveraging Fusion 360's collaborative features to enhance teamwork and communication throughout the design and production process.

AI Challenges and Opportunities for Leadership

1. **Navigating Ethical Dilemmas:**
- Explore the ethical challenges posed by AI in leadership roles, emphasizing the need for ethical decision-making frameworks to address issues such as bias, privacy, and transparency.
2. **Adapting Leadership Styles:**
- Understand how AI technologies impact traditional leadership styles, requiring leaders to adapt and incorporate data-driven decision-making, collaboration with AI systems, and fostering an AI-ready organizational culture.
3. **Risk Management in AI Implementation:**
- Recognize the potential risks associated with AI implementation, from technical challenges to societal impacts. Leaders will learn to effectively manage these risks while leveraging AI opportunities for innovation.
4. **Strategic Integration of AI:**
- Explore opportunities for strategic integration of AI in leadership practices, including enhancing decision support, automating routine tasks, and leveraging AI insights for informed and strategic decision-making.

Strategic Thinking

1. **Holistic Vision Development:**
- Develop the ability to form a holistic vision by mastering strategic thinking, encompassing long-term goals, competitive landscapes, and innovative approaches to problem-solving.
2. **Analytical Decision-Making:**
- Hone analytical thinking skills to assess complex situations, identify patterns, and make informed decisions that align with organizational objectives.
3. **Effective Problem-Solving:**
- Cultivate strategic problem-solving skills, enabling you to address challenges with a forward-thinking mindset and create innovative solutions that contribute to organizational success.
4. **Adaptive Planning:**
- Embrace adaptive planning strategies, understanding how to navigate dynamic environments, anticipate changes, and formulate flexible plans that align with overarching strategic objectives.

Process Discovery for Robotic Process Automation

1. **Identifying Automation Opportunities:**
- Develop skills in recognizing processes suitable for automation, understanding criteria and methodologies for identifying tasks that can be optimized through Robotic Process Automation (RPA).
2. **Data Collection and Analysis:**
- Learn effective techniques for gathering and analyzing data related to existing business processes, facilitating informed decision-making on which processes are prime candidates for RPA implementation.
3. **Mapping Process Flows:**
- Master the art of mapping process flows, creating visual representations of workflows to identify bottlenecks, inefficiencies, and areas where RPA can be strategically implemented.
4. **Optimizing for RPA Integration:**
- Understand how to optimize processes for seamless integration with RPA technologies, ensuring a smooth transition from manual to automated tasks while maximizing the benefits of robotic automation.

Test Automation Foundations

1. **Introduction to Test Automation:**
- Gain a foundational understanding of test automation, exploring its significance in software development, and the key principles that guide automated testing processes.
2. **Automation Tools and Frameworks:**
- Learn about popular test automation tools and frameworks, acquiring the skills needed to select, implement, and integrate them effectively into the software development lifecycle.
3. **Scripting and Coding for Automation:**
- Develop proficiency in scripting and coding for test automation, mastering languages such as Selenium, Appium, or others, to create robust and maintainable automated test scripts.
4. **Test Automation Best Practices:**
- Explore industry best practices for test automation, covering topics such as test case design, maintainability, scalability, and continuous integration to ensure the success of automated testing initiatives.

RoboCupJunior Robotics and Designing Certificate 08/2017

1. **Comprehensive Robotics Education:**
- Earn a RoboCupJunior Robotics and Designing Certificate from esteemed institutions, Notions Egypt and ITI, signifying comprehensive education in robotics and design principles.
2. **Industry-Recognized Credential:**
- Obtain a certificate acknowledged by industry leaders, highlighting the quality of education and expertise gained in robotics through the RoboCupJunior program.
3. **Notable Educational Organizations:**
- Receive certification from Notions Egypt and ITI, reputable names in the field of robotics education, known for their commitment to excellence and innovation.

4. **Positive Feedback and Recognition:**
- Join a community with highly positive feedback, showcasing the effectiveness of the RoboCupJunior program in equipping learners with valuable skills and knowledge in robotics and design.

COURSES

Arduino & Robotics (Notions academy EG) 03/2017

- **Arduino Fundamentals:**
- Develop a solid foundation in Arduino, understanding its hardware, programming language, and applications, laying the groundwork for creating intelligent robotic systems.
- **Robotics Principles:**
- Explore key principles in robotics, covering mechanics, electronics, and programming, to comprehend the interdisciplinary nature of building and programming robots.
- **Hands-On Project Implementation:**
- Engage in hands-on projects that integrate Arduino with robotics, applying theoretical knowledge to design, build, and program robots for practical applications.
- **Sensors and Actuators Integration:**
- Learn how to integrate sensors and actuators with Arduino in robotics, enabling the creation of robots that can perceive their environment and act autonomously based on programmed instructions.

EXTRACURRICULAR ACTIVITIES

Basketball Player 09/2022 - Present

University of Debrecen, Debrecen ,Hungary

Professional Discus thrower 09/2018 - 08/2022

Smouha Sporting Club, Alexandria, Egypt

Student Council 09/2018 - 05/2021

Taymour Amercian School, Alexandria, Egypt

1. **Leadership and Event Coordination:**
- Took on a leadership role in the Student Council, orchestrating various school events and activities to cultivate a sense of community and enhance the student experience.
2. **Advocacy and Representation:**
- Advocated for student concerns and represented their interests in collaborative discussions with school administration, actively contributing to decision-making processes.
3. **Community Engagement and Collaboration:**
- Engaged in collaborative efforts within the Student Council, working with peers and faculty to implement positive changes that fostered a vibrant and inclusive school environment.

Volunteering jobs 02/2016 - 05/2021

Smouha Sporting club, Alexandria, Egypt

- **Library Volunteer:**
- Dedicated service as a Library Volunteer involved organizing and cataloging over 1000 books and printing more than 2000 sheets. Provided valuable assistance to fellow students, contributing to the efficient functioning of the school's library.
- **Animal Shelter Volunteer:**
- Collaborated with a team of more than 20 individuals in the Animal Shelter Volunteer role. Played a pivotal role in rescuing and caring for the lives of 800+ dogs and cats, showcasing a commitment to animal welfare and community service.

Professional Swimmer 03/2005 - 11/2019

Smouha sporting club, Alexandria, Egypt