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Odie Abbas

Nationality: Syrian **Date of birth:** 15/11/1973 **Place of birth:** Damascus , Syria

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Home: Damascus (Syria)

ABOUT ME

I am an educator and researcher in the field of Electronics and Control Engineering. I currently teach undergraduate courses in Electronics, Control Systems, Algorithms, Robotics, and Programming Languages at the Faculties of Artificial Intelligence Engineering at Syrian Private University and Latakia University. My teaching approach bridges theoretical foundations with hands-on laboratory work, preparing students for careers in smart systems and automation.

My research journey is driven by a passion for innovation in tactile sensing. During my Master's degree, I developed a novel acoustic-based tactile sensor that characterizes surface textures (roughness, smoothness, hardness, stickiness) using sound wave reflection and scattering. This work resulted in a granted patent (Patent No: 6438, 2022).

My commitment to technological innovation has been recognized with the Gold Medal at the Al-Basel Exhibition for Creativity and Invention, which I have received twice for my contributions to engineering design and sensing technologies.

With over 15 years of industrial experience in instrumentation, control systems, and crisis management, I bring a practical, problem-solving perspective to my academic and research work. I am currently seeking a PhD position to further advance haptic and acoustic sensing technologies, with applications in human-machine interaction, tele-touch, and smart manufacturing.

EDUCATION AND TRAINING

Masters degree certificate

Tishreen University [19/09/2013 – 20/02/2023]

City: latakia | **Country:** Syria | **Field(s) of study:** Information and Communication Technologies: ● Information and Communication Technologies (ICTs) not further defined | **Level in EQF:** EQF level 7 | **Thesis:** analyzing and transmitting fingerprint tactile signal for enhancing the multimedia

- Developed a novel ****tactile sensing technology**** that generates unique signals mimicking human fingerprint patterns, enabling ****remote texture recognition**** through "tele-touch" applications.

- Designed and implemented a specialized ****acoustic pulse sensor**** operating across a broad frequency spectrum to identify and classify texture characteristics including:
    - Roughness and smoothness
    - Stickiness and slipperiness
    - Softness and hardness
- **KEY ACHIEVEMENT:** This research resulted in a **granted patent** for the developed sensor system **(Patent Title: Impact Based Tactile Sensor Using Acoustic Waves)** , Patent No: [**6438**], [**2022**]), validating the novelty and industrial applicability of the innovation.
- - Established a foundation for ****immersive haptic communication**** in multimedia systems, with applications in virtual reality, remote medical palpation, and quality control in manufacturing.
- - **Bridged the gap between** **physical texture sensing** and **digital signal transmission**, contributing to the emerging field of tactile internet.

Bachelor S Degree in Electric Engineering

Tishreen University [25/09/1992 – 21/09/1998]

City: latakia | **Country:** Syria | **Field(s) of study:** Engineering, manufacturing and construction: • Electronics and automation | **Level in EQF:** EQF level 6 | **Thesis:** robotic arm

1. Signal Processing
2. Microwave Engineering
3. Computers/2/
4. Electroacoustics
5. Integrated Circuits
6. Communication Systems
7. Foreign Language /5/
8. Electronic Measuring Systems
9. Wave Propagation and Antennas
10. Television Engineering
11. Radar Engineering
12. Information theory

Fieldbus Orientation

YOKOGAWA [15/02/2010 – 16/02/2010]

City: Manama | **Country:** Bahrain | **Field(s) of study:** Engineering, manufacturing and construction: • Electronics and automation

STARDOM Maintenance

YOKOGAWA [11/02/2010 – 14/02/2010]

City: Manama | **Country:** Bahrain | **Field(s) of study:** AUTOMATION

ProSaf-rs Maintenance

YOKOGAWA [09/02/2010 – 10/02/2010]

City: Manama | **Country:** Bahrain | **Field(s) of study:** Engineering, manufacturing and construction: • Electronics and automation

CS3000 Operation & Maintenance

YOKOGAWA [06/02/2020 – 08/02/2020]

City: Manama | **Country:** Bahrain | **Field(s) of study:** Engineering, manufacturing and construction: • Electronics and automation

WORK EXPERIENCE

SYRIAN PRIVATE UNIVERSITY – Damascus, Syria

University literature lecturer

[01/09/2024 – Current]

Teaching Electronics Engineering courses at the Faculty of Artificial Intelligence Engineering, including:

- **Core Electronics Subjects:** Logic Circuits, Electric Circuits, and Electronics.
- **Robotics and Sensing:** Sensors, Microcontrollers, and Actuators.
- **Programming Languages:** Algorithms, C, C++, and Python.

Supervising laboratory sessions with hands-on circuit building, microcontroller programming, and sensor integration, using oscilloscopes and simulation software (e.g., MATLAB/Simulink, SPICE).

Integrating Communications Engineering background to connect electronics with AI hardware, embedded systems, and real-time control applications.

Mentoring undergraduate student projects in Robotics and Unmanned Aerial Vehicles (UAVs/drones), guiding students from concept to prototype implementation, including hardware design, sensor fusion, and autonomous control.

Latakia University – Latakia, Syria

University literature lecturer

[01/09/2022 – 01/09/2024]

- Teaching **Logic Circuits, Microcontrollers, and PLC** courses at the Applied College, with hands-on laboratory supervision.

- Supervising multidisciplinary student projects in collaboration with the Chemistry Faculty, including:
- **Electrolysis laboratory equipment** with microcontroller-based control systems
- **Nanofiber production system** for nanotechnology applications (electrospinning technology)
- **Photocatalytic degradation testing setup** for environmental research

- Assessing student performance through practical projects, lab reports, and presentations.

- Integrating **Communications Engineering** background (Master's degree) into practical electronics and control system design.

SYRIAN Gas Company – Homs, Syria

Head of Instrumentation Department / Senior Instrumentation Engineer

[15/11/2014 – 09/12/2022]

- **Led the Instrumentation Department** at a strategic gas processing plant, the sole operational facility supplying gas to power generation stations during the crisis.

- ****Crisis Management & Emergency Recovery:**** Directed engineering response following a **direct strike** that destroyed **70% of control cables**, forcing emergency plant shutdown. Developed and implemented rapid re-engineering solutions to restore partial operation, ensuring continued gas supply to critical power infrastructure.

- ****Innovation under Sanctions:**** Designed and implemented alternative technical solutions to overcome **European sanctions and spare parts embargo**, enabling continuous plant operation despite complete supply chain disruption. This involved reverse engineering, component substitution, and creative adaptation of available resources.

- ****Team Leadership & Training:**** Conducted specialized training programs for plant operators, instrumentation technicians, and mechanical technicians on **reading and analyzing P&ID diagrams** (Piping and Instrumentation Diagrams), enhancing team technical capabilities and operational safety.

Syrian Gas Company – Ebla Gas Plant Project (in collaboration with PetroCanada) – Homs, Syria

Project Instrumentation Engineer

[08/05/2008 – 14/11/2014]

- ****Project Engineering & Design Review**:** Supervised engineering studies and comprehensive design reviews for the **Ebla Gas Plant**, a **3 million m^3/day capacity facility** developed and operated by **PetroCanada** in collaboration with the Syrian Gas Company. The project included a **remote upstream treatment plant located 80 km away**, requiring integrated control and monitoring systems across the distance.
- **Precommissioning & Commissioning Leadership:**** Led all **precommissioning and commissioning** activities for the Ebla Gas Plant, including:
- **Inspection**, testing, and loop checks of instrumentation and control systems
- **Mechanical completion** verification and system handover
- Step-by-step commissioning procedures and performance testing
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- **Plant Startup Supervision:**** Directed the **plant startup** process, overseeing gradual ramp-up to full production capacity while monitoring system performance and troubleshooting technical issues.
- **Advanced Control Systems Training:**** Completed specialized training at **Yokogawa headquarters in Bahrain** on their distributed control systems (DCS), gaining expertise in configuration, operation, and troubleshooting.
- Analytical Equipment Expertise:** Trained on the operation and maintenance of **flow computers and online gas analyzers**, ensuring accurate measurement and quality control of processed gas.
- **Knowledge Transfer:**** Documented lessons learned and operational procedures, training plant operators on newly commissioned systems and equipment.

SKILLS

Microsoft Excel / Microsoft Word / patents / use remote control equipment / execute feasibility study / acoustics / psychoacoustics / signal / matlab / instrumentation equipment / ■ MATLAB / PLC HMI Design / Wonderware InTouch SCADA (PLC-SCADA) / SAP PP / Simulación Circuitos Electrónicos Eagle CAD / university procedures / teach university class / advise on curriculum development

Technical Skills

instrumentation engineering / control systems / electricity principles / electronics / engineering principles

Professional Skills

Problem Solving in Crisis situations / Excellent analytical skills and Problem-solving skills obtained through my work experience / University Teaching & Curriculum Development / Multidisciplinary Project Supervision

LANGUAGE SKILLS

Mother tongue(s): Arabic

Other language(s):

English: Professional Working Proficiency (Reading, Writing, Scientific Communication)

LISTENING A1 **READING** B1 **WRITING** B1

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

[2022]

patent title: Impact Based Tactile Sensor Using Acoustic Waves Patent Number: 6438Issuing Authority: Minister Of Economy And Industry**Date:** 16/10/2025**Description:** This patent protects a novel tactile sensor system developed during the inventor's Master's research in Communications Engineering. The invention introduces a method for analyzing and transmitting texture characteristics using acoustic pulse excitation across a broad frequency spectrum, enabling distinction between roughness, smoothness, stickiness, slipperiness, softness, and hardness. The technology enables "tele-touch" capabilities – the remote transmission of tactile sensations – with applications in enhanced multimedia, virtual reality, remote medical palpation, and quality control in manufacturing.