Fouad ASIL

Nationality: Syrian, Turkish **Date of birth:** 17/03/1991 **Gender:** Male

Phone number: (+90) 5517252119 **Email address:** fouad.asil.91@gmail.com

Website: www.linkedin.com/in/fouad-asil

Home: Seyhan, ADANA, 01140 Adana (Türkiye)

ABOUT ME

Embodying the fusion of human spirit and technological innovation with my prosthetic legs, I am a fast-learning engineer deeply passionate about AI, Optimization, IoT, and Embedded Systems. My personal connection to advanced technology not only shapes my daily life but also fuels my professional aspirations, driving me to explore the limitless potential of man-machine synergy.

WORK EXPERIENCE

IoT Solutions Engineer

Nitro Mechatronics Automotive Service Equipment [2022 – Current]

City: Adana

Country: Türkiye

- Led the design and architecture of comprehensive IoT solutions, ensuring seamless integration of software, firmware, and cloud components.
- Developed and implemented firmware for various IoT devices, optimizing for performance, security, and scalability.
- Engineered software applications to interface with IoT devices, ensuring robust data communication and user-friendly interfaces.
- Established and maintained cloud environments, facilitating data storage, processing, and analytics for IoT deployments.
- Collaborated with cross-functional teams, including hardware engineers, software developers, and product managers, to deliver end-to-end IoT solutions.
- Prioritized security measures across all layers of the IoT stack, safeguarding devices, data, and applications against potential threats.
- Continuously reviewed and updated documentation, ensuring accuracy and clarity for both technical and non-technical stakeholders.
- Stayed abreast of emerging IoT technologies and trends, recommending and implementing best practices and tools to enhance product offerings.

R&D Software Engineer

Nitro Mechatronics Automotive Service Equipment [01/02/2020 – 2021]

City: Adana

Country: Türkiye

- Spearheaded research and development initiatives, focusing on algorithm creation and optimization.
- Analyzed requirements to design robust and efficient products and systems, ensuring alignment with client needs and industry standards.
- Prioritized and implemented security measures to safeguard software applications and embedded systems against potential threats.
- Regularly reviewed and provided feedback on technical documents, ensuring accuracy and adherence to established guidelines.
- Developed desktop applications leveraging C# and Java.
- Designed and implemented mobile applications using Flutter.

R&D Embedded Systems Software Engineer
Nitro Mechatronics Automotive Service Equipment [01/04/2021 – 2022]

City: Adana
Country: Türkiye

- Led R&D projects in the automotive and automation sectors, focusing on embedded system design and implementation.
- Integrated communication protocols like Canbus and Modbus for efficient data exchange.
- Managed actuator controls, sensor readings, and ensured seamless interfacing with software applications.
- Played a key role in fortifying security measures to protect system integrity.
- Employed various microcontroller platforms, including STM32 and ESP32, to develop optimized firmware solutions.
- Collaborated with teams to align embedded solutions with project goals.

Online tutor
Nerdz Academy [01/10/2019 – Current]

Country: Türkiye

- Delivered comprehensive lessons on Circuit Theory.
- Instructed students in Digital Design principles and applications.
- Guided coursework and practical exercises in Embedded Systems.
- Facilitated in-depth sessions on Internet of Things (IoT) concepts and implementations.

Technology Mentor
Microsoft, SGDD ASAM [2018]

City: Adana
Country: Türkiye

Microsoft for Refugees Program in Collaboration with SGDD-ASAM

- Collaborated with Microsoft and SGDD-ASAM on an educational initiative aimed at introducing cutting-edge technologies to refugee students aged 8 to 22.
- Supervised and mentored students in the design and creation of a firefighter robot, showcasing their acquired knowledge and skills.
- Ensured the successful execution of the project, culminating in a tangible demonstration of the students' understanding of the technologies introduced.

Software developers
Freelancer [2012 – Current]

City: Adana
Country: Türkiye

- Designed and implemented custom desktop applications leveraging Java and C# to meet client-specific requirements and enhance user experience.
- Developed intuitive and responsive mobile applications using Flutter, ensuring cross-platform compatibility and optimal performance.
- Collaborated with clients to gather requirements, provide technical consultations, and deliver tailored software solutions on time and within budget.
- Troubleshot and resolved software issues, ensuring smooth application functionality and user satisfaction.
- Stayed updated with the latest industry trends and technologies to provide innovative solutions and maintain a competitive edge.

Intern
Al-Mayal CO. LTD [2015]

City: Yanbu
Country: Saudi Arabia

I interned at Al-Mayal, an electrical contracting company specializing in high voltage lines and transformers. During my tenure, I contributed to the installation of transformers and high voltage power transmission lines.

Intern
United-Expertise CO. LTD [2015]

City: Yanbu
Country: Saudi Arabia

During my internship at UE, a PLC-based can manufacturing facility, I served in the supervision department.

EDUCATION AND TRAINING

Doctor of Philosophy
Cukorova University [2019 – Current]

City: Adana
Country: Türkiye
Website: https://www.cu.edu.tr/
Field(s) of study: Electrical and Electronics Engineering
Thesis: Artificial Intelligence Estimation System for Lithium-Ion Battery Parameters.

Master of Science
Cukorova University [2017 – 2019]

City: Adana
Country: Türkiye
Website: https://www.cu.edu.tr/
Field(s) of study: Electrical and Electronics Engineering
Final grade: 3.86/4.0
Thesis: A Memory Efficient GPU Implementation of ABC Algorithm

Bachelor of Science
Cukurova University [2014 – 2017]

City: Adana
Country: Türkiye
Website: https://www.cu.edu.tr/
Field(s) of study: Electrical and Electronics Engineering

Bachelor of Science
Aleppo University [2009 – Current]

Country: Syria
Website: https://alepuniv.edu.sy/
Field(s) of study: Electronic Engineering

LANGUAGE SKILLS

Mother tongue(s): **Arabic**

Other language(s):

Turkish	**English**
LISTENING B2 **READING** B2 **WRITING** B2	**LISTENING** C2 **READING** C2 **WRITING** C2
SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2	**SPOKEN PRODUCTION** C1 **SPOKEN INTERACTION** C1

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

DIGITAL SKILLS

Programming

flutter/Dart / OOP / C# / nVidia Cuda / Python / C++ / C / Java

Systems Design

Strong knowledge of Data Structures and Algorithms / Parallel Programming / Embedded Systems / IoT / Real-time systems / Automation

Research

Artificial intelligance / Swarm Intelligence / Optimization techniques / Neural Networks / Parallel computing / BMS (Battery Management Systems)

Communications Protocols and Standards

ISO 15765 / I2C / CANbus / USB / SPI / BLE / ISO 14229 / Modbus / J1979 / J1939 / UART / Mqtt Protocol / Bluetooth communication

Devices

STM32 / Atmel AVR / Esp32 / MSP430 / System On Chip (SoC)

PUBLICATIONS

Solving The Travelling Salesman Problem Using Parallelized Artificial Bee Colony Algorithm

[2018]

Fast developing GPU technology increases the performance of search algorithms used to solve NP-hard problems. Travelling Salesman Problem (TSP) is a well-known NP-hard problem. In this paper, we parallelize a popular swarm algorithm, Artificial Bee Colony, to solve TSP. Proposed algorithm is tested on small scale benchmarks obtained by modifying Mandl's Swiss Road Network. Proposed implementation is tested by three experiments performed on a host PC and a GPU card. The results are compared against the results generated by the serial implementation, which is executed on the host PC. Test results for the fully connected benchmark show that the proposed parallel implementation has increased the performance of the computation up to 150 times compared to the serial implementation.

A memory efficient GPU implementation of ABC algorithm [Thesis]

[2019]

Fast developing GPU (Graphic Process Unit) technology increases the performance of search algorithms used to solve NP-hard (None-Deterministic Polynomial Hard) problems. In this thesis, a novel parallel implementation of Artificial Bee Colony Optimization algorithm (Parallel Clones Artificial Bee Colony Algorithm) is proposed. The proposed implementation takes advantage of the modern GPU's computing power to enhance the critical stages of the search. The algorithm employs multiple clones of a bee to search a wide region in a single iteration, which increases the speed of finding good neighbors. The implementation is tested on the Travelling Salesman Problem, a well-known NP-hard problem. Several experiments are performed on the proposed implementation and the test results are compared with the results of other recent ABC (Artificial Bee Colony) implementations. A notable improvement in both efficiency and accuracy compared to other implementation are achieved.

RECOMMENDATIONS

Academic Advisor

Name: Prof. Dr. Mustafa GÖK
Phone number: (+90) 3386868
Email: musgok@cu.edu.tr

Prof. Mustafa GOK, who provided invaluable guidance during my Master's studies, continues to mentor and support me throughout my Ph.D. journey.

manager

Name: Abdullah Jalloul
Email: abdullah.md.jalloul@gmail.com

Mr. Jalloul, with whom I've had the opportunity to work on several projects, can provide further insights into my professional contributions and capabilities

PROJECTS

Wood Factory Automation & ERP Integration Project

As our team embarks on a transformative journey to revolutionize a wood factory through the integration of computer vision and ERP systems, my role has been paramount. I am actively involved in crafting the core algorithm that will underpin the automation processes. My deep expertise in Artificial Intelligence (AI) is currently being channeled into developing a bespoke AI model tailored to the factory's distinct needs. This model, once fully implemented, aims to enhance data processing, optimize resource allocation, and provide predictive insights. Furthermore, I am overseeing the communication components, ensuring that as we progress, there's seamless integration and real-time monitoring capabilities. My ongoing contributions are pivotal to our vision of redefining the factory's operational landscape, with the ultimate goal of enhancing productivity and profitability.

NitroSmart

In the development of NitroSmart, an IoT-driven M2M diagnostic tool, my role has been central and multifaceted. I spearheaded the analysis phase, diving deep into the requirements to ensure the tool's efficacy. Drawing from this analysis, I meticulously crafted the core algorithm, which is the backbone of its diagnostic capabilities. My expertise didn't stop there; I was also the architect behind the firmware, ensuring robust and seamless communication between the tool and vehicles. The mobile application, which serves as the user's gateway to NitroSmart's insights, was another area I championed. I designed and implemented it, ensuring that users have a comprehensive and intuitive vehicle analysis right at their fingertips. Through my contributions, NitroSmart is poised to redefine vehicle diagnostics in the IoT era.

ERP Plugin for Vehicle Data Integration

In the realm of enhancing the Enterprise Resource Planning (ERP) system, I played a pivotal role. I took the initiative to develop and implement a specialized plugin tailored for automotive data acquisition. Drawing from my expertise, I designed the plugin to interface directly with vehicles using the CANbus protocol, a task that required a deep understanding of both automotive communication and ERP integration. My work ensured that the plugin could capture vital vehicle information in real-time and then seamlessly feed this data into the ERP system. As a result of my contributions, stakeholders now have direct access to comprehensive vehicle metrics, facilitating more informed analysis, reporting, and decision-making. Through my efforts, the ERP system has been enriched with a direct bridge to automotive data, enhancing its overall utility and value to the enterprise.

Nitro Toolbox: Multi-functional Vehicle Diagnostic Device

The Nitro Toolbox, a beacon of modern automotive diagnostic technology, greatly benefited from my expertise and involvement, particularly in the realm of its desktop application. I was entrusted with the responsibility of developing and refining the desktop interface, ensuring that users could seamlessly interact with the device's myriad of diagnostic features.

For the Voltage Regulator Testing, I integrated a comprehensive support system into the application, accommodating major protocols like LIN BUS, RLO, SIG, C (Japan), C (Korea), RVC, P-D, and LD. This ensured that automotive professionals could thoroughly examine a vehicle's voltage regulator with ease.

In the realm of Magnetic Sensor Analysis, I tailored the desktop application to facilitate testing of both inductive and hall sensors, streamlining the process and ensuring accurate results.

The CANBus Analyzer, a crucial feature, was another area I championed. I designed its initial integration as a single-channel feature in the desktop application, which played a pivotal role in real-time data communication diagnostics. Recognizing its significance, I also contributed to its evolution into a standalone project in subsequent versions of the Nitro Toolbox.

Through my efforts, the Nitro Toolbox has become an epitome of innovation and practicality, providing automotive professionals with a comprehensive and user-friendly desktop solution for their diverse diagnostic needs

Link: https://nitrobilisim.com.tr/tr/nitro-toolbox-konjektor-ve-sensor-test-cihazi

OBDTalk

In the development of this innovative diagnostic tool, my contributions have been central and multifaceted. I was the architect behind the core algorithms that drive the tool's diagnostic capabilities, ensuring accuracy and efficiency in vehicle analysis. Delving deeper into the technical aspects, I crafted the firmware, ensuring that the tool operates seamlessly and reliably.

Furthermore, I played a pivotal role in the software development, particularly focusing on the communication libraries. These libraries, which I meticulously designed and implemented, are crucial for facilitating communication between the tool and the vehicle. By leveraging the client's smartphone as an interface, my contributions have enabled users to access comprehensive vehicle diagnostics in a user-friendly and intuitive manner, bridging the gap between advanced automotive technology and everyday user experience.

DSG Transmission Control Unit's Test Device

In the sphere of transmission diagnostics, my expertise played a pivotal role in the development of a tool tailored for the DSG-7 DQ200 model transmissions. I embarked on an intensive research journey, meticulously studying the working principles of these specific transmissions. This deep dive ensured that the tool's foundation was rooted in accuracy and precision.

Beyond research, I was the driving force behind the desktop application that serves as the primary interface for the tool. I designed it to be intuitive, ensuring that users could harness the full potential of the tool with ease. Every feature, from solenoid tests to gear shifts, bears the mark of my dedication to creating a seamless user experience.

Through my rigorous research and application development, I've contributed significantly to advancing the standards of transmission diagnostics in the industry.

Link: https://tcurepair.com/

CKP-CMP Signals Generator

In the field of engine diagnostics, I played a central role in the development and refinement of the CKP-CMP Signals Generator. My expertise was channeled into crafting the application that interfaces with the tool, ensuring that users could seamlessly interact with its features and capabilities.

Beyond the application, I delved deep into the intricacies of signal processing, ensuring that the tool could generate both HALL and Inductive signals with utmost precision. The algorithms, which are the backbone of the tool's signal simulation capabilities, were also a product of my meticulous design and development. Whether users opt to utilize existing log files or create signal forms based on specific properties, my contributions ensure accuracy and flexibility in every operation.

Through my work on the application, signal processing, and algorithm development, the CKP-CMP Signals Generator, exclusively developed for internal use at Nitro, has set a benchmark in engine diagnostic signal generation.

CANBus Logger and Analyzer

In addressing the complexities of CANBus data logging and analysis, my technical expertise was instrumental. I was the primary architect behind both the firmware and software of this tool, ensuring its reliability and efficiency from the ground up.

The firmware, meticulously crafted by me, ensures that the tool captures, logs, and analyzes data traffic on the CANBus network seamlessly in real-time. On the software front, I designed an intuitive interface paired with robust capabilities, making it user-friendly while retaining its advanced functionalities.

Through my comprehensive work on the firmware and software, professionals are now equipped with a powerful tool that streamlines the monitoring, troubleshooting, and optimization of CANBus systems, guaranteeing seamless communication and peak operational efficiency.

Link: https://nitrobilisim.com.tr/can-bus-analyzer-2

Automatic Reverse Engineering Tool of CAN Bus Data

In the development of this cutting-edge tool aimed at transforming CAN Bus data analysis, my role was multifaceted and pivotal. I embarked on an intensive research phase, ensuring that the tool was tailored to meet the unique requirements of internal operations and the nuances of Nitro's proprietary file format.

Drawing from my research, I meticulously crafted the algorithms that empower the tool to intelligently cluster requests and responses, and detect specific protocols with unparalleled precision. My expertise also extended to the design and implementation of both the firmware and software, ensuring seamless operation and user interaction.

Furthermore, when a recognized protocol is identified, the algorithms I developed enable the tool to autonomously generate a simulation file. This file, a direct result of my contributions, has become an invaluable asset for various company-specific scenarios, significantly enhancing workflow and data utilization. Through my comprehensive involvement in research, algorithm development, firmware, and software design, the tool stands as a testament to innovation and precision in CAN Bus data analysis.

DPF Cleaning Device

The DPF Cleaning Device, tailored for the meticulous care of diesel particulate filters (DPF), greatly benefited from my technical expertise. I was the driving force behind the development of both the firmware and the software for this tool.

The firmware, which I meticulously crafted, ensures that the device operates seamlessly, utilizing advanced techniques to effectively remove accumulated soot and ash from the DPF. This ensures optimal engine performance and reduced emissions.

Beyond the firmware, I was also responsible for designing and implementing the mobile application that interfaces with the DPF Cleaning Device. This application, tailored for user convenience, allows users to monitor and manage the cleaning process directly from their smartphones, making the maintenance process more intuitive and efficient.

Through my dedicated work on the firmware and the mobile application, the DPF Cleaning Device stands as a beacon of innovation and practicality in diesel vehicle maintenance.

Cesur: Firefighter Robot

As a result of my role as Technology Mentor & Project Coordinator in the Microsoft for Refugees Program, we developed "Cesur," a firefighter robot. Cesur is equipped with a camera and multi-sensor system for fire detection and employs a dual (water-air) fire suppression system. The project was conceptualized and designed by students aged 8 to 22 under my guidance and mentorship.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication & Interpersonal Skills

Possessing a natural aptitude for effective communication, I excel in both one-on-one interactions and group settings. My friendly demeanor fosters positive relationships, making it easy for colleagues and clients alike to approach and collaborate with me. This congeniality, combined with my strong communication skills, ensures that I can convey complex ideas with clarity and precision. Furthermore, my proficiency in teamwork is evident in the harmonious and productive dynamics I consistently maintain within team environments. My ability to listen, understand, and respond effectively makes me a valuable asset in any collaborative setting, ensuring smooth communication flows and the achievement of shared objectives. Additionally, my personal journey with disability has not only honed my resilience but has also served as a source of motivation and inspiration for others, demonstrating the power of perseverance and a positive mindset.

VOLUNTEERING

Volunteer Activities at University

[Adana]

Throughout my university journey, I was deeply committed to volunteering, always seeking opportunities to give back to the community and make a positive difference.

As a co-founder of a local student club, I was instrumental in organizing and participating in various community service initiatives. Our club became a hub for students eager to contribute to meaningful causes. One of our most cherished activities was visiting orphanages, where we spent time with the children, bringing them joy and companionship.

Recognizing the challenges faced by newcomers to the university, I also took an active role in assisting new students during their registration process. This initiative ensured that their transition into university life was as smooth and welcoming as possible.

These volunteer efforts not only enriched my personal growth but also underscored the importance of community engagement and the profound impact of selfless service.