

Aicha Makhlouf

Software Engineer

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Profile

Passionate Software Developer with 8 years of experience in designing, developing, and implementing software solutions. Specialized in .NET development (7 years), Angular and React, with expertise in building both web and desktop applications. Proficient in C/C++, C#, Python, and experienced in unit testing with NUnit, MSTest, and Moq. Passionate about crafting innovative and efficient solutions that enhance user experience. Proven ability to tackle complex problems, collaborate effectively within teams, and drive software projects to success.

Work experience

- November 2024 - current **Software Engineer, TSI- Charguia II-Tunisie** , Development of automated Tests and updating features related to financial portfolio management, **Tasks**
- Development and execution of automated tests for the NewRest website using C, Selenium WebDriver, and SQL
 - Enhancement of existing desktop functionalities related to financial portfolio management, including performance improvements of data processing algorithms
 - Backend development using .NET (C) with CQRS architecture for scalable and maintainable business logic
 - Frontend development using Angular for the migration of the OPCVM financial platform from a desktop WPF application to a web-based solution
 - Collaboration in the design and integration of complex data models and service layers
 - Technologies: C#.NET Framework, WPF, Angular, SQL Server, LINQ, Entity Framework, CQRS, Unit Testing, TypeScript
- October 2023 - Août 2024 **Software Engineer, Carmenta- Munich-Germany** , Development of an internal application to test the mqtt messages from the backend of the website and modification in the frontend , **Tasks**
- developement of an application using C#/Net WPF, that reads the mqtt messages in realtime and shows the history of positions in the map besides of the hole messages
 - modify the frontend using React js/Redux, Nodejs and Javascript
 - Test the mqtt messages from the backend using Mqtt explorer
 - Development activities in an agile team (Scrum)
- June 2023 – July 2023 , **Software developer, SBS IT Consulting - Munich, Germany**, Development of an internal application **Tasks:**
- Development of internal applications with C# /.NET Core and WPF
 - Validation of the solutions using NUnit tests in C#
 - Front-end development with WPF (.xaml)
- Jan 2022 – May 2023 , **Software Engineer, Beanair - Monastir, Tunisia**, Development of a desktop application to control bridges in C# with WPF **Tasks:**
- Development of tools with C++/Qt, Python, and C#; application development with C#/.NET Framework, WPF.Net, SOA, and SQL
 - Validation of solutions using automated unit tests in C# and MS Unit Test
 - User training on the new features
 - Responsible for the development of the front-end with WPF and MVC
 - Providing technical leadership within the team
 - providing technical support for developers
 - Responsibility for 1st and 2nd level support for users
 - Implementation of solutions
 - Using the CI/CD pipeline with Git, Bitbucket, and Jira
 - Development activities in an agile team (Scrum)
- July 2020 – Dec 2021 , **Software Engineer, Redline - Monastir, Tunisia**, Implementation of a CRM web application **Tasks:**
- Development of web applications with ASP.Net (Entity Framework), MVC5, SQL Server
 - Automated unit tests in C#, Moq, and NUnit Framework
 - Development of the frontend with HTML5, CSS3, and JS libraries
 - Development of REST interface with ASP.NET Framework, C#, and MongoDB
 - Implementation of solutions
 - Using Visual Studio and TFS
 - Development activities in an agile team (Scrum)

Dec 2019 – June 2020 , **Embedded Software Engineer, Yamaichi - Sousse, Tunisia**, Control various test devices via a website

Tasks:

- Control various devices with Beaglebone Black using Eclipse and C/C++
- Establish a website to control the card with HTML/CSS and JavaScript
- Implementation of solutions
- Using Eclipse and Git
- Development activities in an agile team (Scrum)

June 2018 - Nov 2019 , **Software Test Engineer, ACTIA es - Ariana , Tunisia**

Tasks:

- Participation in the test strategy and provision of test environments
- Creation of test data
- Writing procedural instructions
- Creation of test plans and test scripts

Education

2018 **Master of Science in Road and Traffic Engineering**, *National Engineering School of Sousse, Sousse, Tunisia, Focus/Interests: •Intelligent traffic control systems, •Embedded and software development*

Master's thesis: Design and optimization of an inductive connection for wireless charging of electric vehicles

2016 **Bachelor's degree in electrical engineering**, *National Engineering School of Monastir, Monastir, Tunisia, Focus/Interests: • Design of digital circuits • Technical computer Science*

Bachelor thesis: Conception and realization of a 3D scanner

2013 **preparatory school diploma for engineering schools**, *preparatory institute for engineering studies in Monastir, Monastir, Tunisia, speciality: Mathematics and physics(MP)*

•analyzes and algebra•Electromagnetism,Mechanical,Waves

Skills

Software Knowledge .Net, C#, C/C++, Java, HTML, CSS, PHP, JavaScript, XML, Android, Python

Database MySQL, SGBD

IDE Eclipse, NetBeans, CodeBlocks, Matlab, Visual Studio, Android Studio

Operating Systems Linux, Android, Windows

Embedded Boards Raspberry Pi, Arduino, PIC C, Beaglebone Black

Projects

Task Manager ○ A web-based Task Management Application that allows users to create, update, delete, and categorize tasks efficiently. The app features a clean UI, real-time state management with Redux, and persistent data storage using local storage or a backend API.
○ Technologies Used: *Frontend: React.js, Redux Toolkit, React Router *State Management: Redux (with Redux Toolkit) *UI Framework: Tailwind CSS / Material-UI *Backend : Node.js, Express, MongoDB *Authentication : Firebase/Auth0

AI-Powered E-learning Platform ○ Technologies: React.js, Next.js, Redux, Node.js, PostgreSQL, Firebase, OpenAI API, AWS.
○ Developing a full-scale SaaS platform with AI-powered tutoring, real-time engagement, and monetization features
○ AI tutor, speech-to-text learning, course marketplace, live chat, gamification, and scalable cloud infrastructure

- real-time emotion recognition application with Python/C++/Matlab:
- Face Detection: using the Open CV library to implement face detection algorithms. These algorithms allow the system to locate and isolate faces within video streams or images.
 - employing of pre-trained models (Open CV's facial landmark detection) to identify and extract key facial landmarks. These landmarks included the eyes, eyebrows, nose, and mouth
 - extracting relevant features, such as eye movements, eyebrow positions, mouth curvature, and facial muscle activity. These features provide crucial information for emotion classification.
 - training machine learning models (Support Vector Machines (SVM)) using labeled datasets. The models classify the extracted facial features into different emotional states, such as happiness, sadness, anger, surprise, fear, and disgust.
 - implementing the system to continuously analyze the input video stream or image frames, providing real-time emotion recognition. This enables dynamic monitoring and capturing of emotions as they occurred
 - The recognized emotions were visually displayed, either by overlaying emotion labels or symbols on the video feed or by generating emotion-based visualizations. Additionally, the system could provide textual or audio-based feedback regarding the detected emotions.
- website of a traffic manager:
- Use ASP.NET, C# and Visual studio 2017 to implement a web application that provides users with the location of buses on Google Map and the time left to get to the next stations based on traffic density
- Conception and realization of a 3D scanner:
- Optimum choice of materials and the best technical solution allowing to have a clear image.
 - Mechanical design and development of the 3D model of the scanner
 - Design and sizing of the power section: sizing of the battery and Boost converter for the voltage rise from 5V to 12V with optimal choice of parameters using an appropriate power supply of devices such as the LCD screen and the step-by-step engine.
 - Development and implementation of the control system using a Raspberry Pi platform
 - use Qt to create buttons and menus to allow users to interact with the scanner, configure settings, and visualize the scan results.
 - Use open CV for the image acquisition and processing

Languages

German	Level (B1/B2)
English	Professional
French	Native

Interest

Travel, swimming, music, horseback riding, robotics, volunteering