





ALTFACTOR Ltd.

<https://altfactor.ro/>

ALTFACTOR is a private company based in Galati, Romania, with over 20 years of experience in developing custom software. We create multimedia software applications in fields such as education, tourism, ecology, and healthcare. Our expertise includes interactive multimedia software for e-learning, as well as applications that utilize Virtual Reality, Augmented Reality, and complex web-based CMS systems. We have also gained significant expertise in IoT, data handling, visualization, machine learning/AI and more, through our participation in over 20 EU-funded projects.

OUR MISSION

Our mission at ALTFACTOR is to improve people's lives by innovatively using multimedia technologies to facilitate learning and ease the transition into the Digital Age.

YOUR VISION, REALIZED BY US

(WHAT WE CAN DO FOR YOU)

ALTFACTOR is specialized in AI, deep learning, and computer vision, offering a wide range of services including image and text processing, bioinformatics, audio data analysis, and IoT data processing. Our expertise in VR and 3D applications allows us to create highly immersive experiences, realistic simulations, and interactive content that captivate users. Additionally, we develop complex, customized web applications, CMS solutions, and IoT systems with advanced data management and visualization capabilities. Our expertise extends to creating and deploying AI algorithms, VR integrations, and web technologies across various platforms, enhancing user interaction and providing tailored, innovative solutions for diverse industries.



OUR DETAILED OFFERING

1. ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING SOFTWARE AND RESEARCH

1. **Image Processing:** Advanced image classification, object detection using deep learning, computer vision techniques, and text extraction from images.
2. **Text Processing:** Text classification, sentiment analysis, and information extraction, including keyword and entity extraction.
3. Bioinformatics Data Processing
4. **Audio Data Processing and Analysis:** Comprehensive analysis of sounds and audio files.
5. IoT Data Processing and Analysis
6. Time Series Analysis and Forecasting
7. Predictive Algorithm Development:
 - o **Regression:** For numerical variable prediction.
 - o **Classification:** For discrete variable classification in finance, healthcare, marketing, retail, spam detection, and customer satisfaction.
8. Recommendation Systems
9. **Large Language Models:** Installation, configuration, and utilization.
10. AI and IoT-Based Intelligent Surveillance Systems
11. **Twin Sensors and Soft Sensors Implementation/Development** for industrial IoT, economic applications, and smart cities.
12. **Deploying AI Algorithms** directly on devices like smartphones and IoT devices.

2. CUSTOM SOFTWARE FOR VIRTUAL REALITY

1. **Interactive Object Handling:** Realistic interactions such as button pressing, object lifting, and system assembly within VR environments.
2. **VR Simulation:** Expertise in Unity C#/.NET for physical simulations, creating physics-based rendering materials, generating dynamic lighting, and developing immersive 2D and 3D spatial audio experiences.
3. **Multuser VR Applications:** Expertise in creating multuser VR applications using Photon, enabling collaborative virtual experiences.
4. **Data Visualization and Mapping:** Integrating geolocation systems, visual data representations, and comprehensive logging systems in VR.
5. **IoT Data Integration:** Seamless incorporation of data from Raspberry Pi/Arduino devices into VR scenes.
6. **Cross-Platform Deployment:** Exporting applications for platforms like Oculus Quest 3 and HTC Vive, and across operating systems like Windows, Mac, Linux, iOS, and Android.



7. **User Experience Enhancement:** Developing animated characters, user avatars, vehicle movement simulations, and conducting automated software testing in VR environments.

3. WEB-BASED APPS

1. Development of complex, custom web applications tailored to client requirements.
2. Corporate portal and application development.
3. Content management system (CMS) development.
4. Customization of existing CMS applications (WordPress, Joomla).
5. Map integration in applications (Google Maps, OpenStreetMap), including custom map features like adding points of interest, route marking, and route calculation.
6. Advanced user action tracking solutions for web applications.

We have extensive experience in developing web applications, utilizing a wide range of technologies. Our expertise includes:

- **Programming Languages:** C#, Python, PHP, JavaScript.
- **Integrated Development Environments (IDEs):** Visual Studio, Spyder, R Studio.
- **Front-End Development Technologies:** PHP, HTML5, CSS3, CSS Grid, Flexbox, SASS, Bootstrap, Zurb Foundation, Materialize, jQuery, jQuery UI, Ajax, ReactJS, Redux, ChartJs, Laravel, Docker, Node.js, API, WordPress, Prestashop, Magento.
- **Database Management:** Skilled in MySQL, SQL Server, MongoDB, Firebase, PostgreSQL, Vertica, using both relational and non-relational approaches.
- **Data Visualization:** Proficient in tools like Python (matplotlib), R (ggplot), and Power BI for delivering visually compelling data presentations.

4. IIOT INTEGRATION

ALTFACTOR, in collaboration with academic partners, has been deeply involved in various IoT projects, gaining specialized expertise in several key areas: architectural analysis and IoT solution development, sensor installation and configuration tailored to specific needs, prototype development using different sensor types, and IoT solution optimization with a focus on energy efficiency. We also excel in managing sensor data, storing it in specialized structures, and visualizing the transmitted data. Furthermore, we conduct exploratory data analysis and have the capability to integrate VR-based software solutions using IoT data.



PREFERRED PARTNERS AND CLIENTS

We are interested in the following types of clients and partners:

- Small and medium-sized enterprises (SME) and Institutions that would like to purchase custom application development services in VR, from healthcare, tourism, heritage, education and environmental fields
- Educational institutions that could purchase VR educational applications
- Companies or institutions interested in developing web applications for themselves, or for integration or resale, that could make use of what we are currently developing, or some new development

SME OR INSTITUTIONS that would like to involve in partnerships for accessing European R&D funds, taking into account our research directions, which are:

- Integration of VR technologies in the front-end layer of intelligent complex systems,
- Expanding our experience in IoT based systems and data management,
- Increasing our knowledge in artificial intelligence (mainly deep learning).

We are looking for new projects, where we can provide our expertise in the fields mentioned above.