Aliaksei Ivanou | C++ Software Engineer

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● **Versatile Software Engineer with 11+ years of technical expertise in algorithm development, system optimization, and cross-platform implementation:**

○ started as a **MATLAB developer** (**7.5 years** of experience), specializing in data analysis and image processing for 10+ Earth Observation satellites and UAVs, developing image processing and compression algorithms.

○ currently working as a **C/C++ developer** (**4+ years** of experience) across diverse technical stacks, collaborating with internal and client teams across multiple countries and time zones, with experience in leading a 2-person team.

● Passionate about Image Processing, Embedded Systems, and tackling complex structures, with a strong ability to optimize and restructure legacy systems.

● Focused on achieving business goals through deep domain immersion and the creation of effective user scenarios.

● Seeking to leverage my expertise in C/C++ software development. Valid work residence permit for Poland.

Tech Stack & Domains

● *Languages & Frameworks*: C, C89, C++, C++11, C++14, C++17, MATLAB.

● *Infrastructure & Cloud*: Amazon Web Services (AWS).

● *Development Tools*: git, GitHub, BitBucket, Jira, Jenkins, GCC, gdb, CMake, Visual Studio, FLTK GUI Library, plog logger, GoogleTest, Point Cloud Library, System Tool Kit.

● *Development Practices*: Test-driven development, CI/CD pipelines, Agile methodologies, Scrum methodology, Kanban methodology, Code review, Data Analysis, Software Design Patterns, Object-Oriented Programming, Debugging.

● *Databases & Storage*: PostgreSQL, MySQL, SQLite, Microsoft Access.

● *Core Domains*: Aerospace, Satellite Systems, UAV Systems, Embedded Systems, FinTech, Geoinformatics, Oil & Gas.

Experience

C++ Software Engineer | Innowise Group **12/2024 - Present**

Innowise is a global software development company. It specializes in Big Data, AI, RPA, IoT, AR/VR, and Blockchain.

● **Conducted** code reviews to ensure quality and maintainability, supported new **developers** through onboarding and mentorship, ensuring their successful completion of the probation period, improved technical documentation and best practices, and conducted technical **interviews**.

Tech Stack: C, C++, Qt, Qt 6, git, Jira, CMake, GoogleTest, Visual Studio, Test-driven development, PostgreSQL, MySQL.

C++ Software Engineer | EPAM Systems **09/2021 - 08/2024**

EPAM Systems (NYSE: EPAM) is one of the global leaders in both digital engineering and IT consulting, recognized for innovation, cloud, and AI services.

● **Worked** on **2 projects**, including an Oil & Gas Corporate System and a Library System, adapting to various tech stacks (from **C89** to **C++17**) to meet client requirements and deliver optimal solutions, regardless of legacy or modern technologies, demonstrating strong problem solving skills and effective communication skills in a result-driven approach and expertise in cross-platform development.

● **Supported** and **enhanced** projects by **developing 16+ user-requested features**, optimizing **20%** of the codebase, improving functionality and system stability by **15%**, and enhancing overall capabilities through legacy code removal and optimization, resulting in improved system performance, efficiency, reliability by **25%**, and a **15%** boost in functionality.

● **Enhanced user experience** across projects by optimizing database queries, reducing processing time by **15%**, increasing codebase efficiency, and implementing new features, resulting in improved overall functionality and performance.

● **Led a team of 2 developers** in feature development, optimizing project execution and resource allocation, which resulted in a **20%** reduction in feature delivery time.

● **Built** and **maintained strong relationships** with both the **internal team** and the **external customer team**, fostering effective communication that resulted in a **30%** reduction in the integration time for new software versions and deployment to users.

Tech Stack: C, C89, C++, C++14, C++17, Java, Java 8, Java 11, Scala, JavaScript, Amazon Web Services (AWS), Apache, Linux, gdb, SSH, git, BitBucket, Jira, Jenkins, GCC, Valgrind, CMake, Test-driven development, CI/CD pipelines, Agile methodologies, Scrum methodology, Kanban methodology, Code review, PostgreSQL, MySQL, TCP/IP, WebSockets.

C++ Software Engineer | Personal project **03/2020 - 06/2021**

● **Created** independently a **home accounting app** with an intuitive FLTK-based interface for transaction entry and financial analysis, integrating SQLite for efficient data management.

● **Employed** GoogleTest for application reliability, plog for error logging, and CMake for build automation to improve development workflow.

● **Developed** custom financial analysis tools, enhancing user experience and providing actionable insights into spending patterns.

Tech Stack: C, C++, C++11, git, GitHub, FLTK GUI Library, plog logger, GoogleTest, CMake, Visual Studio, Test-driven development, SQLite.

MATLAB Software Engineer | PELENG **08/2012 - 01/2020**

PELENG is a developer and manufacturer of high-tech defense, security, and industry systems, specializing in optoelectronic products like thermal sights, surveillance, space and UAV systems emphasizing innovation and collaboration with public and private sectors.

● **Developed** and **optimized image processing algorithms** in **MATLAB** for **10+ Earth Remote Sensing satellites with optical imaging systems**, enhancing data quality and processing efficiency by **40%**, created software for image stitching and defect removal, cutting post-processing time by **60%**, and designed resolution assessment software for flight tests, improving image analysis speed by **5x**.

● **Developed** and **implemented** an **image compression algorithm** in **MATLAB** for satellites, achieving **3-4x lossy compression** while preserving image integrity and reducing computational load.

● **Developed** software in **MATLAB** for **image type prediction** for image quantization, improving image quality by **30%** and enhancing Earth observation accuracy by **20%**.

● **Developed image processing modules** for UAVs in **MATLAB**, including debayering, stabilization, and sensor fusion, **calibrated** Inertial Measurement Unit sensors to improve coordinate accuracy by **30%**, and participated in **30+ UAV test flights** to evaluate software performance and ensure precise data acquisition.

Tech Stack: MATLAB, git, GitHub, Proprietary Software, Test-driven development.

Education

● Programming course. C++ EPAM Systems Laboratory : EPAM Systems, 05/2021 - 08/2021
● Programming course. C++ EPAM Systems Mentoring Program : EPAM Systems, 05/2020 - 08/2021
● Programming course. C++ Programming : IT-Academy.by, 03/2018 - 05/2018
● Higher education. Bachelor's Degree in Radiophysics. Satellite information systems and technologies : Belarusian State University, Faculty of Radiophysics and Computer Technologies, 09/2007 - 07/2012

Languages

● **English**: High Intermediate proficiency (B1+)
● **Polish**: Intermediate proficiency (B1)
● **Swedish**: Elementary proficiency (A2)
● **Russian**: Native or bilingual proficiency (C2)
● **Belarusian**: Native or bilingual proficiency (C2)