Aliaksei Ivanou | C++ Software Engineer

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● **11.5+ years of experience** in software development, specializing in **image processing**, **satellite systems**, and **embedded systems:**

○ **4 years** of experience as a **C/C++ developer**, including freelance work, contributing to diverse commercial projects with varying technical stacks and collaborating with distributed teams across different countries and time zones.

○ **7.5 years** of experience as a **MATLAB developer**, focusing on image processing for 10+ Earth Observation satellites and UAVs, developing algorithms for image compression, stitching, and sensor calibration to enhance image quality and processing efficiency, developing image processing algorithms for UAVs, including IMU calibration for accurate frame center coordinate estimation, enhancing optical payload performance.

● Passionate about Image Processing, and Embedded Systems. Skilled at optimizing and restructuring legacy systems.

● Seeking a position of a C++ Software Engineer in Poland, preferably in Warsaw, hybrid. Valid work residence permit for Poland.

Tech Stack & Domains

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

● *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 founded in 2007, with 2000+ professionals. It has delivered 1300+ projects for 300+ clients, specializing 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, improved documentation and best practices, and conducted technical **interviews**.

Tech Stack: C, C++, MySQL, PostgreSQL, Visual Studio, git, GoogleTest.

C++ Software Engineer | EPAM Systems | 09.2021 - 08.2024

Since 1993, EPAM Systems (NYSE: EPAM) has been a leader in digital engineering, cloud, and AI services, with 50,000+ employees and clients across six continents, recognized for innovation and IT consulting leadership.

● **Worked** on **2 projects** with different tech stacks, adapting to both legacy systems and modern languages to meet project and client requirements.

● **Supported** a **C++17**-based Oil & Gas Corporate System, developed **4+ user-requested features**, enhancing functionality and improving system stability by **10%** through legacy code removal and optimization.

● **Enhanced user experience** in Oil & Gas Corporate System by optimizing database queries, reducing processing time by **15%** and increasing codebase efficiency.

● **Worked** as a **Key C Developer** on a 40+ year-old Library System, optimizing **20%** of the codebase to enhance maintainability and performance, which improved system reliability by **25%** and boosted functionality by **15%**.

● **Improved user experience** in the Library System by designing and implementing **12+ user-requested features**, greatly enhancing system capabilities and overall functionality.

● **Led feature development** with a team of **2 developers**, ensuring efficient integration of C code across languages and improving feature delivery time by **20%,** while maintaining constant communication with the client's team for a **30%** reduction in integration time.

● Delivered bi-weekly sprint demos to client department heads, improving client satisfaction by **10%,** and contributed to reducing system errors by **40%** while resolving complex issues.

Tech Stask: C, C89, C++, C++17, Java 8, Java 11, Scala, Apache, Amazon Web Services (AWS), gdb, SSH, git, BitBucket, Jira, Jenkins, Linux, MySQL, PostgreSQL.

C++ Software Engineer | Freelance | 03.2020 - 06.2021

● **Created** 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++11, Git, GitHub, FLTK GUI Library, Visual Studio, plog, SQLite, CMake, GoogleTest.

MATLAB Software Engineer | PELENG | 08.2012 - 01.2020

PELENG is a Belarusian developer and manufacturer of high-tech defense, security, and industry systems, specializing in optoelectronic products like thermal sights, surveillance, space and UAV systems, with 3500+ employees, emphasizing innovation and collaboration with public and private sectors.

● **Developed** and **optimized** image processing algorithms for **10+ Earth observation satellites**, enhancing data quality and boosting processing efficiency by **40%.**

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

● **Created** software for satellite image stitching and defect removal, cutting post-processing time by **60%** and improving quality by eliminating dust and stitching artifacts.

● **Designed** and **deployed** resolution assessment software for flight tests, accelerating image analysis by **5x** and enhancing accuracy, while leading in-orbit tests and ensuring **100%** mission success.

● **Developed** predictive models and sensor quantization software, reducing data loss by **15%,** improving Earth observation accuracy by **20%,** and optimizing satellite data retrieval by **70%.**

● **Built** digital **image processing modules** for UAVs in MATLAB, including debayering, stabilization, format conversion, and sensor fusion for better target recognition.

● **Developed** a software module to calculate the center frame coordinates and calibrated the IMU sensors for a UAV, improving coordinate accuracy by **30%** for precise georeferencing.

● **Participated** in **30+ UAV test flights** as a **payload operator**, evaluating and testing the performance of developed software modules to ensure system functionality and accurate data acquisition.

Tech Stack: MATLAB, C++11, System Tool Kit, Ruby, Ruby On Rails, PostgreSQL, Microsoft Access.

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, 09.2007 - 07.2012

Languages

• Russian (Native) • Belarussian (Native) • English (Upper Intermediate) • Swedish (Basic) • Polish (Intermediate)