



# Kamil Machnicki

SENIOR SOFTWARE DEVELOPER · CREATIVE TECHNOLOGY ARCHITECT

Wrocław, Poland

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## Summary

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A versatile senior software engineer with almost 10 years of professional experience in vast industries: automotive, medical, embedded, AI, telecommunication and mixed reality. Majority of my experience involves working with embedded hardware and C++ software development using latest standards, together with UI creation using the Qt framework.

I'm highly motivated by working with modern C++ and leading creative projects. Moreover, I know how to quit vim.

## Skills

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**Advanced** C++ 11/14/17/20, Qt, QML, Git, Embedded systems, Design patterns, Mixed reality

**Intermediate** Unreal Engine 5, Python, Linux, Unix Shell, Node.js

**Tools** STL, Boost, GStreamer, ZMQ, Protobuf, Gtest, Gmock, Clang, Valgrind, Cppcheck, Figma, Zeplin

**Languages** Polish (native), English (C2), German (B1), Russian (A1)

## Experience

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### Sii Solutions / Epic Games

Wrocław, Poland

CREATIVE TECHNOLOGY ARCHITECT: C++ 17, UNREAL ENGINE 5, MIXED REALITY

Mar. 2023 - Present

Leading a creative project of constructing a HMI Mixed Reality simulator. Defined architecture for the whole system, constructed the physical XR Buck with real vehicle parts and connected it to the virtual world using the Varjo XR-3 headset. Various 3D rendering engines and frameworks were used in production, including Unreal Engine 5, Rightware Kanzi and IPG CarMaker.

### Sii Solutions / Rimac Automobili

Wrocław, Poland

SENIOR SOFTWARE ENGINEER: C++ 17, QT, QML, EMBEDDED SYSTEMS

Aug. 2021 - Feb. 2023

Infotainment HMI development with Qt/QML and C++17 standard. Involved in creation of UI as well as middleware during all of the software life cycle. Was setting up and maintaining an embedded Toradex i.MX 8 based hardware. Created an advanced video playback module using GStreamer and gained automotive and FuSa know-how.

### Sii Poland / QIAGEN

Wrocław, Poland

SENIOR SOFTWARE ENGINEER: C++ 17, QT, QWIDGETS, UI DESIGN, EMBEDDED SYSTEMS

Nov. 2018 - Jul. 2021

Member of a core team developing UI and control software for a new automated end-to-end DNA/RNA purification instrument using Qt/QWidgets and C++17 standard. Obtained knowledge in molecular diagnostics, medical biology and digital electronics. Worked close to the Toradex i.MX 6 based hardware by mounting stepper motor encoders, soldering test hardware board and processing digital signals.

### Nokia Networks

Wrocław, Poland

SOFTWARE ENGINEER: C++ 11/14, PYTHON, NODE.JS, EMBEDDED SYSTEMS

Jul. 2014 - Jan. 2018

Developed embedded functionalities for base transceiver stations (BTS) using newest language standards C++11/14. Cooperated with other development, testing and integration teams in a vast multinational environment in Scrum methodology. Possessed knowledge regarding radio technology with its 2G/3G/4G (GSM, WCDMA, LTE) standards.

## Education

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### Wrocław University of Science and Technology

Wrocław, Poland

M.Sc. IN COMPUTER SCIENCE AT ELECTRONICS DEPARTMENT, APPLIED COMPUTER ENGINEERING IN MEDICINE SPECIALIZATION

Feb. 2016 - Sep. 2017

Numerous projects regarding Machine Learning and Artificial Intelligence done in Python.

### Wrocław University of Science and Technology

Wrocław, Poland

B.Sc. IN COMPUTER SCIENCE AT ELECTRONICS DEPARTMENT, INTERNET ENGINEERING SPECIALIZATION

Sep. 2012 - Feb. 2016

An active member of a game development academic club TKGames - projects in Unreal Engine 4 and Unity 3D.

## Notable projects

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### Blood morphology results grapher

PYTHON, OCR, MATPLOTLIB, PLOTLY

2020

### Car driver simulation using selected machine learning algorithms

PYTHON, MACHINE LEARNING, ARTIFICIAL INTELLIGENCE, REINFORCEMENT LEARNING, ALGORITHMS

2017

### Web portal for editing, compiling and running C++ code, with code quality metrics

C++, PYTHON, SANDBOXING, VIRTUALIZATION, LINUX CONTAINERS, DOCKER, VAGRANT, C++ QUALITY MEASUREMENT

2016

## Presentation

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### Unreal Fest 2023 by Epic Games

New Orleans, USA

PRESENTER FOR: DESIGNING AUTOMOTIVE HMI USING XR

Oct. 2023

Presented the XR Buck on the scene and described the technologies used. The recording is available on the Unreal Engine YouTube page.

## Certificates

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- 2023 **Unreal Engine 5 C++: The Ultimate Game Developer Course**, Stephen Ulibarri
- 2023 **Unreal Engine 5 C++ Developer: Learn C++ & Make Video Games**, GameDev.tv / Ben Tristem
- 2022 **System architecture for automotive embedded devices**, Sages
- 2018 **Permission to operate electric devices of voltage up to 1kV**, SEP (Polish Society of Electricians)
- 2017 **Design Patterns in C++ 14**, Infotraining
- 2016 **ISTQB Certified Tester Foundation Level**, Polish Testing Board
- 2014 **Practical Aspects of Software Development**, Nokia Networks
- 2014 **CCNA Routing and Switching: Introduction to Networks**, Cisco Networking Academy

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