

Łukasz Przeniosło

Curriculum vitae

WORK EXPERIENCE

• JULY 2017 – PRESENT

Przenioslo Electronics & Software, Szczecin

Hardware & Software Engineer (Owner)

Hardware and software design according to the client's needs and/ or specifications (remotely and onsite).

• MAY 2020 – DECEMBER 2021

Icotera Sp. z o.o., Szczecin

Hardware Subject Matter Expert

Hardware development processes management and verification.

• JULY 2017 – MAY 2020

Apptimia Sp. z o.o., Szczecin

Electronics design & software specialist

Embedded software and hardware development for UAV and IoT devices (project lead).

• JUNE 2013 – JULY 2017

Mechatronic Engineering Sp. z o.o., Szczecin

Hardware & software engineer

Development and maintenance of hardware for the produced SMT machinery, writing firmware for the created hardware, writing testing PC applications, building prototypes.

• JULY 2012 – JUNE 2013

Mechatronic Engineering Sp. z o.o., Szczecin

Hardware & manufacture engineer

SMT machinery hardware assembly, faulty parts service, existing designs debugging.

EDUCATION

2014–16 **Electrical engineering**

MA DIPLOMA

ZUT, Szczecin

2010–14 **Electronics engineering**

BA DIPLOMA

ZUT, Szczecin

COURSES & LICENSES

2022 **Sages MISRA C**

Safe code based on MISRA C course

2018 **C++ Institute CLA & CLP**

Advanced C11 programming course

2017 **Unmanned Aerial Vehicle Operator**

Visual Line of sight (VLOS) license

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CV always under github.com/bremenpl/cv/blob/master/tex/cv.pdf

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HONORS AND SCHOLARSHIPS

2017 **City president best thesis award**

Received for MA thesis: "Universal smart electric motors controller for industry applications"

2015 **Minister of science and higher education scholarship**

Received in 2015 for academic achievements

SKILLS

HW PCB design & production, soldering, rapid prototyping, Altium Designer, Orcad/ Allegro, AVR, PIC, ARM, PowerPC, STM32, FPGA, C2000, MEMS, RF/analog, power electronics, low power, BMS

SW Assembly, C, Modern C++, MISRA C, Qt, QML, Matlab, Plescs, Spice, GIT, VHDL, DSP, FreeRTOS, motor control, Buildroot/ Yocto, Linux drivers, IoT, OPCUA, Unit testing

MISC Documentation (LaTeX, Doxygen, Office), HW/SW product management (design, pricing, production, BOM optimization)

COMMUNICATION

POLISH Native language

ENGLISH Full professional proficiency

GERMAN Elementary proficiency

SOCIAL NETWORKING

LINKEDIN linkedin.com/in/przenioslo

GITHUB github.com/bremenpl

GITHUB github.com/przenioslo

I agree to the processing of personal data provided in this document for realising the recruitment process pursuant to the Personal Data Protection Act of 10 May 2018 (Journal of Laws 2018, item 1000) and in agreement with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)

APPENDIX A: EXTENDED COMPETENCE LIST (HARDWARE)

- Digital circuits development based on discrete components or advanced IC's
 - MCU based designs, using IC's such as ARM Cortex M0/M3/M4/M7, PIC, AVR or C2000 families,
 - CPU based designs, using IC's such as NXP i.MX 6 and i.MX 7 series application processors or TI AM335x Sitara application processors,
 - FPGA based designs, using IC's such as Xilinx Spartan family or Lattice Mach family,
 - experience in high speed designs consisting of memories IC's such as: NOR/ NAND Flash, DDR3 RAM, SD cards and eMMC chips, SATA drives,
 - familiar with high speed design utilized for reducing:
 - * cross-talk,
 - * ground bounce,
 - * radiation (EMI),
 - * distortion,
 - familiar with signaling/equalization and signal integrity provision techniques
 - knowledge about serial interfaces, such as: UART/ USART, I2C, I2S, SPI, QSPI, CAN, LIN, Ethernet, Ethercat.
- Analog circuits development based on discrete components and dedicated IC's
 - experience in audio analog front-end designs,
 - experience in building low voltage measurement circuits,
 - utilizing high resolution ADC's and DAC's,
 - good knowledge about analog circuits shielding and separation (i.e. ground start connections, guard rings, via shielding and stitching),
 - experience in RF analog front-end design. Utilized techniques:
 - * output to antenna matching impedance circuits (Wavelength and Microstrip),
 - * PCB antenna length tuning,
 - * knowledge about network analyzer usage,
 - built devices in the following technologies/ frequencies (and wrote firmware for them):
 - * Wifi, 2.4 Ghz (ESP8266 and ESP32),
 - * Zigbee, 2.4 Ghz and 868 Mhz (Digi Xbee Digimesh),
 - * Bluetooth, 2.4 Ghz (Nordic NRF chips),
 - * 2G/ 3G, 820 - 2200 Mhz (u-Blox SARA U201),
 - good knowledge about the principles of operation of the basic discrete components such as BJT's, Mosfets, OP Amp's, Flip-flops, Multiplexers/ Demultiplexers etc.
- Power electronics circuits development based on discrete components and dedicated IC's
 - motor control drivers (from ground-up) for the following motor types: Stepper motors, DC motors, VCM (Voice coil) motors, BLDC and PMSM,
 - experience in creating hardware for industry grade robots utilized in SMT production, such as: Pick and Place machines, Stencil printers, conveyors and reflow ovens,
 - DC-DC converters (Buck and Boost converters),
 - built and programmed high voltage and current (Lithium and Lead acid based) Battery Management Systems (BMS) for power backup applications,
 - experience in building various battery chemistry devices and chargers (i.e.: Li-ion, Li-pol, LiFePo4 (LFP), Nimh, lead acid),
 - experience in building low power, energy harvesting, battery powered IoT devices.
- CAD/ CAM/ Simulation technologies, tools knowledge and usage experience:
 - long time Altium Designer user,
 - experience in schematics design and simulation,
 - experience in mixed signals design's PCB creation consisting of up to 12 layers stackups,
 - experience in creating multi PCB designs
 - experience in using SPICE and other simulation tools, such as: LTSpice, SIMetrix, Simulink, PLECS,
 - experience in WiFi technology based (incl. AX) hardware development and testing.

APPENDIX B: EXTENDED COMPETENCE LIST (SOFTWARE)

- Hardware description languages:
 - proficient in VHDL code design,
 - less experienced in Verilog code design.
- Assembly
 - experienced in AVR Assembler space efficient code development for memory constrained devices,
 - generic knowledge of ARM and x86 assemblers for debugging purposes.
- C
 - long time experience in C89, C99 and C11 standards usage,
 - bare metal applications (no operating system),
 - real time operating systems applications, such as FreeRTOS,
 - embedded Linux based applications (ARM and PowerPC),
 - high efficiency x86 multiplatform applications,
 - Linux Kernel drivers development (character and network drivers) for self built Buildroot and Yocto based kernel images,
 - knowledge in the memory management field (MMU, DMA, dynamic memory allocation, memory structure architectures),
 - experience in multiprocess and multithread applications (good knowledge of multithreading principles),
 - experience in using generic and self written DSP libraries for applications such as: PID control, Fuzzy Logic control, audio signals processing, measurement data processing).
 - experience in using MISRA C and various Linter applications.
- C++
 - long time experience in C++11, C++14 and C++17 standards,
 - build efficient applications for multiple operating systems: Windows, Linux, Mac OS, iOS, Android,
 - utilizing modern C++ concepts, such as Smart Pointers, Futures, Lambdas, Templates, Move semantics,
 - familiar with well known design patterns,
 - familiar with design principles such as SOLID or RAII,
 - familiar with Unit Testing principles,
 - experience in multithreaded application in low and high level domain,
 - long time experience in using Qt with QML and/ or Felgo frameworks. Utilized Qt technology for building truly multiplatform (desktop and mobile) applications,
 - experience in creating event driven applications,
 - build both backend (headless) and front end (GUI) applications,
 - knowledge about maintaining good balance between code readability/ quality and high performance,
 - knowledge of data structures and algorithms,
 - experience in both low level (TCP/IP, UDP) and high level (HTTP, FTP, SFTP, OPCUA, MQTT etc.) networking protocols and applications.
- Tools and Operating Systems
 - proficient in Unix/Linux, Windows and MacOS environments,
 - familiar with make, qmake and cmake building tools,
 - worked with multiple compilers: MSVC, GCC and CLANG,
 - working efficiently with GIT version control (and SVN in forced to),
 - familiar with Valgrind dynamic analysis tool,
 - familiar with GDB debugging tool both locally and remotely,
 - familiar with Gtest and Ceedling unit testing frameworks,
 - familiar with Jira and Confluence management and documentations tools.

APPENDIX C: EXTENDED COMPETENCE LIST (MISCELLANEOUS)

- Proficient in documentation preparation using
 - \LaTeX ,
 - Doxygen,
 - MS Office/ Libre Office
 - Confluence
- experience in hardware, software and mixed type of products leading in small teams. Long time interdisciplinary experience provides good diversity for various projects,
- can act as a standalone developer or a team player in a project,
- good at multitasking, can handle multiple sub-tasks simultaneously,
- experienced with developer to client relations handling,
- experienced with client to ODM relations handling,
- good at Power Point presentations (both preparing and giving them),
- experienced with working in multicultural environments.
- experienced with leading engineering teams in various embedded projects.