

ROMAN PIETRZAK
SOFTWARE ENGINEER
HEAD OF SOFTWARE | LEAD ARCHITECT

LOCATION, AVAILABILITY, UPDATES

Remote, based in Europe (UK and Poland)
Availability: 1 week
CV updated 2025-02-18

CONTACT

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QUICK SUMMARY

20+ YEARS IN SOFTWARE DEVELOPMENT

- **HEAD/LEAD (20+ PPL), STARTUP EXPERIENCE**
- **FULL STACK WEB-DEV (20+ YEARS EXPERIENCE, EXPERT LEVEL)**
 - NODE.JS, GOLANG, PYTHON, JAVASCRIPT/TYPESCRIPT, WEBSOCKETS, GRAPHQL, REDIS, MONGODB, MYSQL, SERVERLESS, PHP/LARAVEL
 - EDGE SERVERS: CLOUDFLARE WORKERS (JAVASCRIPT/TYPESCRIPT)
 - REACT, WEBPACK, HTML 5, CSS/LESS/STYLUS, WEBGL, CANVAS, SVG, VUE, ANGULAR
 - ADTECH, KYC/AML, SUMSUB, BLOCKCHAIN, OPENRTB, STRIPE, ADYEN
- **DEV-OPS, INFRASTRUCTURE ENGINEERING, AUTOMATIONS OF DEPLOYMENT, MONITORING, TESTING (20+ YEARS EXPERIENCE)**
 - AWS SDK/CDK, GCP, DOCKER, HELM, KUBERNETES, TERRAFORM, LINUX
 - GRAFANA, PROMETHEUS, ELASTICSEARCH
 - TDD, DEVELOPMENT IN TEST (SDET), SELENIUM, KARMA, MOCHA, JEST, CIRCLECI
- **DATA ENGINEERING, MACHINE LEARNING, AI**
 - APACHE AIRFLOW, BIGQUERY, GCP PUB/SUB, KAFKA, SNOWPLOW
- **SCALE**
 - >1TB/DAY, >400MB/s, 100s OF SERVERS, 5ms RESPONSES
- **EMBEDDED SOFTWARE (20+ YEARS EXPERIENCE)**
 - EMBEDDED, DIGITAL TV (STB), IOT, LINUX, BARE-METAL, ARM/CORTEX
 - C, QT, C++, JAVA, OPENGL

...more detailed info in "Skills & Experience" section on page #2

*** INTRO ***

I LOVE TO BUILD SOFTWARE, THEREFORE I SOMETIMES WORKED ON MULTIPLE PROJECTS, SO SOME WORK OVERLAP.

- SECTION 1 - RECENT WORK
- SECTION 2 - SKILLS AND EXPERIENCE
- SECTION 3 - ACHIEVEMENTS
- SECTION 4 - SIDE PROJECTS
- SECTION 5 - FULL HISTORY OF PRIMARY OCCUPATION
- SECTION 6 - EDUCATION

1 - RECENT WORK

- **THE OZONE PROJECT [2023 JUL - NOW] - HEAD OF SOFTWARE | LEAD ARCHITECT**
 - **RESPONSIBLE FOR THE SOFTWARE STACK AND THE TEAM**
 - STRATEGY, EXECUTION AND 3RD PARTY INTERACTIONS
 - DELIVERED FAST AND SCALABLE SOFTWARE STACK - MILLISECDS PROCESSING, 100'S OF SERVERS, 100K'S OF REQ/S
 - INTEGRATE WITH THE DATA ENGINEERING TEAM TO PROCESS 100'S OF TB/DAY FOR MACHINE LEARNING AND REAL-TIME ANALYTICS
 - **KEY ACHIEVEMENTS**
 - REDEFINED CODE-DRIVEN PROCESSES TO BE DATA-DRIVEN
 - CHANGES THAT NEEDED "A SPRINT+RELEASE", TAKE A FEW MINUTES NOW (AKA "RULE ENGINE")
 - EASY EXPERIMENTING ON % OF PRODUCTION TRAFFIC (AKA "EXPERIMENTATION PLATFORM") - SETUP IN MINUTES COMPARING TO MONTHS BEFORE
 - REPLACED 3RD-PARTY DATA PIPELINE SOLUTION (SNOWPLOW) WITH IN-HOUSE SOLUTION (BID HARVESTER)
 - SAVED +100K \$/MONTH IN CLOUD BILLS
 - SELF-CONTROL OF THE DATA PROCESSING: ENRICH, MONITOR, ROUTE THE TARGETS
 - SELF-CONTROL OF THE STACK: SCALING, CHANGES, DEPLOYMENTS
 - Adtech application (SSP - Supply Side Platform)
 - Leading a team of 20+ Software Engineers
 - Building the software using:
 - code: **golang, node.js, Python, Java, Typescript/Javascript,**
 - devops/infra: **AWS, GCP, k8s, CloudFlare, prometheus/grafana/datadog, CI/CD, Jenkins**
 - tooling: **Apache Airflow, Elastic Search, PostgreSQL, MongoDB, BigQuery, GCP Pub/Sub, kafka, websockets**
 - Event Sourcing, CQRS, Domain Driven Design patterns
 - real-time oriented style with modern websocket/events based interaction
 - hands-on when needed (I do code!)
 - I assist the team to achieve the goals by
 - building an efficient, truly agile, fully remote, international team
 - redefining the relationships of software developers with product/business - the culture of ownership
 - individuals lead the initiative, smaller/shorter meetings, quick feedback loops - **truly agile!**
 - encouraging self-growth, software craftsmanship, collaboration, knowledge sharing
 - **"extraordinary team achieves extraordinary goals"**
- **LONDONLINK [2021 FEB - 2024 JAN] - HEAD OF SOFTWARE**
 - **RESPONSIBLE FOR THE SOFTWARE STACK AND THE TEAM**
 - STRATEGY, EXECUTION AND 3RD PARTY INTERACTIONS
 - SECURITY, COMPLIANCE, RELIABILITY
 - **KEY ACHIEVEMENTS**
 - BUILT THE SOFTWARE: MOVED THE COMPANY FROM 100'S OF SPREADSHEETS TO FULLY INTEGRATED SOFTWARE STACK - CLIENT AND INTERNAL FACING

- BUILT THE TEAM: SMALL AND EFFICIENT (TRULY AGILE), FULLY REMOTE, COST EFFECTIVE, INTERNATIONAL EXPERTS IN THEIR FIELDS
- Fintech application within the **crypto industry**
 - Compliance with standards of KYC, AML, transaction monitoring, GDPR etc.
 - Blockchain integration, including 3rd party apps, e.g. Fireblocks, Chainalysis, Elliptic, Crystal
 - Bank APIs, payment providers, KYC/AML APIs (e.g. SumSub)
- Integrated variety of ad-hoc external systems (3rd party apps, spreadsheets, single-purpose tools) into one consistent environment for clients and staff:
 - Introduced or standardized multiple processes/workflows in the company to allow better automation
 - with long-term security and efficiency goals in mind - on both office/workplace and software development domains
 - following the regulatory/compliance needs (KYC, AML, transaction monitoring...)
- I proposed the software architecture, cloud infrastructure and set of development principles. Then executed and ensured user's adoption:
 - Designed, developed and deployed complex product of backend apps, frontend apps (customer and internal facing), **KISS**:
 - stack: real-time oriented with modern websocket/events based interaction on all layers,
 - coding: fullstack javascript, **node.js, React, typescript**, javascript, Chakra, C/C++ and Rust,
 - Event Sourcing, CQRS and other Domain Driven Design patterns
 - Devops/Infra: **microservices, AWS** (Amplify, Fargate, Elastic Containers - ECS, Organisations etc.), Docker, CI/CD, Jenkins, Apache Airflow, Cloud **Security**, Elastic Search, kubernetes
 - **mongoDB, kafka**, postgresSQL
 - external integrations: bank APIs, crypto APIs, KYC APIs, Fireblocks, sumsub, sendgrid and more
 - **TDD** oriented process, convenient dev environment, PR/CI/CD/testing processes that are flexible and improve development experience. Result: high quality software with happy devs.
 - mocha, jest, selenium, jenkins, monitoring and logging pipelines,

...FULL WORK HISTORY IN SECTION #5...

2 - SKILLS & EXPERIENCE (20+ YEARS)

FULL STACK WEB DEVELOPMENT

- front: **TypeScript, JavaScript (ES6), React.js, Vue.js, Angular, Webpack**, CoffeeScript, WebGL, HTML/CSS, Websockets, Ajax, MVC frameworks, Canvas, jQuery, Stylus
- server-side: **Node.js, Kafka**, Python, PHP/Laravel, Amazon Cloud (AWS/SDK/CDK), **MongoDB (NoSQL)**, MySQL, C++
- experience with non-trivial performance goals, examples:
 - **website load below 50ms**
 - **websockets** for all browser-server interaction
 - **webGL** as layout/design renderer
- auto-tests: **Selenium, Jest, Mocha.js, node.js/python** scripted
- CROSS-BROWSER DEVELOPMENT, BROWSER INTERNALS, STANDARDS
- NON-TYPICAL ENVIRONMENTS
 - QT-EXTENDED WEBKIT BROWSER RUNNING ON SETTOPBOX
 - WEB-API MANAGEMENT FOR EMBEDDED DEVICES LIKE STBs, RASPBERRY Pi, ETC.
- OLD-SCHOOL: FLASH, ACTIONSCRIPT - (2000-2006) EXPERIENCE IN OPTIMIZATION OF LARGE ACTIONSCRIPT APPLICATIONS

GENERAL SOFTWARE DEVELOPMENT

- Scale: milliseconds processing, 100's of servers, 100k's of req/s
- Databases: SQL and NoSQL (mysql, mongoDB)
- languages:
 - **node.js, Javascript, Typescript**
 - Python, Java
 - C AND C++ FOR EMBEDDED DEVICES AND DESKTOP (PC)
 - QT IS MY THING, BUT WORKED WITH OTHER FRAMEWORKS TOO
 - DIRECTX AND GL EXPERIENCE
 - BARE METAL AND DRIVERS CODE
 - PHP
 - JAVA FOR PC, SET TOP BOX, MOBILE
 - ASSEMBLER FOR x86, SH4, MIPS, ARM AND OLD-SCHOOL
 - OLD-SCHOOL: C++ BUILDER, PASCAL/DELPHI, BASIC, AMOS, C64
- techs and tools:
 - **automation, TDD/BDD, development in tests (SDET)**
 - GIT, SVN, CVS AND CODE REVIEW TOOLS,
 - Jenkins, CMAKE, MAKEFILE, CONTINUOUS INTEGRATION,, ANT, OPENSUSE BUILD SYSTEM (OBS),
 - JIRA, Asana, BASECAMP, BUGZILLA, RTC
 - Kanban, Agile, Scrum

DEVOPS / INFRA

- **AWS** (CDK/SDK, EC2, FARGATE, ECS, SERVERLESS), **GCP**
- deployment, helm, kubernetes, docker, Rancher
- performance & monitoring Grafana, Prometheus, Jmeter
- SCALING, SHARDING, PARTITIONING, LOAD-BALANCING - ACHIEVING HIGH-SCALE PERFORMANCE GOALS
- SECURITY, SSL, HTTPS, x.509 CERTIFICATES

EMBEDDED DEV

- IoT CAMERAS/CAR DEVICES
- BROADCOM AND ST SoC FOR SETTOPBOX, FROM DRIVER-LEVEL TO GUI APPLICATIONS
- LPC CORTEX M0 PURE-C BARE-METAL IMPLEMENTATION, 1-WIRE, RS485, RF, ETC.
- RASPBERRY-PI, PC CARDS, MINOR FPGA/VHDL

GFX RENDERING

- LOW-LEVEL: FRAMEBUFFER, BLITTER, FREETYPE2, MULTI-CORE RENDERING,
- MODERN ANIMATED GUI FRAMEWORKS, QT - ARCHITECT LEVEL
- OPENGL, WebGL, GLSL, VERTEX/PIXEL/FRAGMENT SHADER, 2D/3D, DIRECTX,

SETTOPBOX & AUDIO/VIDEO

- ALL LAYERS: APPLICATIONS, DRIVERS, MIDDLEWARE (MHP, WEBKIT)
- GUIs FOR SETTOPBOX: C/C++, QT, GL (SHADERS), JAVASCRIPT (HTML) AND JAVA (MHP)
- DIGITAL TV SPECIFICS: MPEG, DVB-T, DVB-S, DVB-C, ATSC, (DE)MULTIPLEXERS, PSI/SI, ETSI 300 468, CA, TELETXT, SUBTITLES
 - DELTACAST CARD: SDI VIDEO ANALYSIS APPLICATION - QT/GL
- OS/21, LINUX, STAPI, BROADCOM APIs

GUIs AND UIx

- GUI DESIGN WITH PROCEDURAL GRAPHICS AND ANIMATION
- QT/QML, GL, JAVA SWING, C++ BORLAND VCL, DIRECT WINAPI AND FLASH (ACTIONSCRIPT),
- 2D/3D REALTIME CHARTING OF HUGE NUMERICAL DATABASES (STOCK PRICES, GOVERNMENT STATS, COMPANY DATA ETC.)
- EMBEDDED GUI DESIGN FOR SETTOPBOX

OTHER

- networking: websockets, ipv6, http, https, ssl, curl, bson, graphql, rest, RPC, WINNET, WIFI STACK, RADIUS, QNETWORK,
- WINAPI: GDI, DIRECTX, WINNET, SHELL INTEGRATION, SYSTEM-SERVICES,
- LINUX: GDB, KERNEL/DRIVERS AND USER-SPACE DEVELOPMENT,

- **technical experience specifics**
 - **automation is king**: Test Driven Development (TDD), Continuous Integration, test-racks, development tooling
 - heavy understanding of multitasking, memory management, parallel processing, multi-platform messaging and synchronization etc.
 - rebuild functionality with **better performance, lower memory usage**, better resource managing etc. - struggling with performance ? ask me for examples...
 - **system analysis**: a lot of experience with analyzing architecture in multi-layer projects (from user application level and network services, through middleware, down to drivers level) to achieve extraordinary goals
- **business experience**
 - running a successful business in UK (KEMU STUDIO LIMITED) and Poland (KEMU STUDIO)

- **remote teams** and cost/quality effective offshore teams
- involved into cross-company projects – with a good sense of marketing-vs-technical goals
- **human factor (aka "soft skills")**
 - passion to IT - I **develop software a lot more than 8h/5d**
 - good team play, strong **leading**, high culture of work
 - strong understanding of the whole **software development process**: define, develop, test, deploy
 - very good in documentation writing, I did many forms of knowledge sharing (coaching, mentoring)
 - open to new techs, languages, APIs, tools – happy to learn
 - good in R&D – ask questions, understand documentation, propose and execute tests to proof or negate concepts,
 - worked in multi-national teams. Have been working onsite in: UK, Poland, Germany, Netherlands, USA, Taiwan

3 – ACHIEVEMENTS

- **2016** - the Web GUI for embedded device (professional DigitalTV receiver)
 - **PROBLEM:** implement modern Web GUI on old embedded device from 2004
 - **LOOKS IMPOSSIBLE:** only 0.5MB free memory of 128MB total, no recent libraries support, embedded OS (non-linux), **C/C++** only, bare metal
 - **STEP #1:** reclaimed 6.5 MB by optimising graphics memory usage by direct use of hardware composer on CPU
 - **STEP #2:** used **node.js** on PC to implement GUI itself with modern **JavaScript** libraries
 - **STEP #3:** implemented **JSON API** on **HTTP** socket in pure **C/C++** to allow **WebGUI** control
 - **STEP #4:** the website has been served in the form of "binary blob" through simplified **HTTP server** in **C/C++**
- **2008 – 2014** – Calculla.com – Developer of JS-PHP full stack (and Team Leader)
 - 300+ **JavaScript** calculators for various purposes: taxes, health, electronics, etc.
 - mix of various **node.js/PHP** frameworks to achieve performance goals: **40-60ms rendering time** of whole page
- **2015** the Chroma Sampling in Digital TV project - as example mix of C Low-Level driver+FPGA+VIDEO processing
 - **PROBLEM:** no support for specific chroma sampling mode (mandatory for customer). CPU vendor says "**it is impossible**"
 - **TOOL:** implemented benchmarking toolset in **Qt (C++)** to prove the concept with use of **OpenGL shaders**
 - **SOLUTION:** designed pre-filter on CPU (**C/C++/math**) to cheat hardware, then **used FPGA (VHDL)** to recover original Chroma samples for the image

4 – SIDE PROJECTS

I'm Kemu Studio owner since 1996 and I've proudly delivered several side projects:

- **DELIVERED 100+ projects** for embedded, IoT, web, servers, cloud, desktop and mobile apps, data processing&visualisation, games,
- **FOUNDED** Calculla.com and Calculla.pl
 - **150k+ unique users/month** from english and polish language base
 - sold/licensed calculators source code to external websites (infor.pl, wieszjak.pl and some minors),
- **MANAGING** cost efficient bussiness in two countries: UK (**KEMU STUDIO LIMITED**) and Poland (**KEMU STUDIO POLAND**)
- **LEADING** devs, artists, testers and hardware designers, team-work in remote and non-remote basis
- **FREELANCED:**
 - freelancer.com - **10/10 score points** in all contracts,
 - infor.pl - one of the largest law&economy portals in Poland – **JavaScript** programming
 - dogo.pl - web studio – 10+ **PHP+JavaScript** websites and **C++** applications
 - idownload.com - USA software reseller (non-existent currently) – **C++** applications with **DirectX**

5 - HISTORY OF PRIMARY OCCUPATION

- **CALLULLA.COM [2015 – 2021] – WEB FULL-STACK TECHNICAL LEAD**
 - Leading a team of developers in **Agile + Kanban**, re-building Calculla website in **node.js** (it was **PHP** before)
 - Huge web application:
 - 300+ calculators (**JavaScript**)
 - backend microservices supporting variety of bussiness domains (e.g. stock exchange and forex feeds, chemistry databases, math formulas etc.)
 - built on specialized OOP/MVC framework to support the size and performance of the project:
 - **SinglePageApplication** with heavy **WebSockets** utilization with fallbacks to Ajax (Rest and No-Rest APIs)
 - **node.js** + Express + **JavaScript** ES6/ES5/CoffeeScript
 - NoSQL (**MongoDB**) + **MySQL** mix
 - React.js-like rendering to HTML 5 and DOM and SVG and WebGL
 - Multi-target rendering in **JavaScript** into browser DOM and server-side HTML, XML, JSON
 - **WebGL** used for web-design and components – dynamic layout, gfx rendered by WebGL + SVG code
 - Stylus for CSS, Terser and Browserify for minifying, GULP for build process – a webpack-like advanced toolset,
 - Automated testing: **TDD** with selenium, mocha, Jest – **wrote and managed 29k tests**
 - **AWS, Docker**, Gulp, Jake, babel, Terser/uglify, webpack
- **MODUSBOX.COM / BILL & MELINDA GATES FUNDATION [2019 OCT – 2021] – LEAD DEVELOPER**
 - Developing Mojaloop - open source software for creating digital payments platforms that connect all customers, merchants, banks, and other financial providers in a country's economy
 - Working in performance optimization team: **Scaled & optimized** from **100 ops/s** to **5k/s**
 - Techs:
 - Backend: **node.js, Kafka, Redis, MongoDB, MySQL, Hapi, rdkafka(C/C++)**
 - Devops: **AWS, DOCKER, Kubernetes, microK8s, Helm, Rancher, Grafana, Prometheus, CircleCI**
- **CHRONOMICS.COM [2020-10– 2021-01] – TRANSITION PROJECT LEAD**
 - Lead of transition to **Microservices+ node.js + React** based architecture (from PHP/Laravel + Python monolith)
 - **React, node.js, AWS SDK, PHP/Laravel, Python, serverless**
 - **AWS CDK** based deployments to **Fargate** (Elastic Containers), Docker, Cloud Security
- **RSCONNECT.COM [2020-07– 2020-10] – TRANSITION PROJECT LEAD**
 - Lead of new project to develop fresh **IoT** solution for live-tracing of a car fleet, using 3rd party hardware and AI solutions
 - Lead 3 people team
 - embedded **C/C++** on camera device, with **TCP/SSL**, smart downloads, Wifi/4G connectivity, with vendor camera SDK (VIA)
 - **node.js, React** a live/realtime application for management of fleet
 - **AWS IoT Core** and **AWS** services deployments
- **SHUTTERSTOCK.COM [2018-10– 2020-03] – FULL STACK LEAD DEVELOPER**
 - I'm redeveloping admin application, leading 5-7 devs,
 - software stack for managing \$600M/year of sales,
 - moving from 15 years old Perl codebase to **node.js** based **microservices** application

- **node.js, React, Vue, GraphQL + Apollo** (as gateway-API to microservices), **JavaScript ES6, Jest** (API + unit tests)
- **AWS, Docker, Kubernetes, Helm, Jenkins**
- **NODECTED.COM [2016 - 2019] - EMBEDDED C & WEB FULL-STACK**
 - Product development and delivery
 - **High Frequency Arbitrary Waveform Generator (up to 16 MHz, 14bit DAC, 256Msamples)**
 - Full stack from hardware to React:
 - **React.js** based GUI connected by **websocket** to API
 - **NODE.js** server API
 - embedded controller (**ARM C**) with **BJSON** API on raw **TCP** sockets
 - PCB and Hardware design (electrical)
- **MINISTRY OF JUSTICE [2018-08 - 2018-10] - INTERIM FULL-STACK TECHNICAL LEAD**
 - I was leading a series of 1-3 week spikes, proving various tech solutions for building court digitisation platform
 - **leading** small team of developers in Agile + Kanban process,
 - **JavaScript ES6/ES5/TypeScript + Angular + Nunjucks**
 - **TDD** driven development of gateway API with **NODE.js + Express.js + Mocha + Jest**
- **CISCO/SKY - [2017-01 - 2018-08]**
 - **SkyQ project - Web Full-Stack Engineer & C/C++ developer**
 - **BIG-DATA web-app** for stats/logs and management of stress-test racks for **160+ units**
 - Frontend with realtime-updates: **JavaScript ES6, React.js, D3.js charts, websockets**
 - Backend: **node.js, JavaScript ES6, C/C++** and **python**
 - Other techs: **Jenkins, Linux**
 - **C/C++** code for **Embedded Linux SetTopBox**, ARM architecture for advanced SoCs from ST and Broadcom
 - embedded full stack development: linux drivers (**C**), Middleware stack (**C/C++**) and user SkyQ application in **C++/QT**
 - encrypted video/audio streaming over network to iPad/iPhone, Android and other STBs
 - Developed the automatic test-station in **node.js, JavaScript ES6** for improving the dev process
- **XEROX (UK, POOLE) - [2016-11 - 2016-12]**
 - I developed browser APIs in **JavaScript ES6**
 - Machine Learning models to cost-reduce the support-line experience
 - Testing with **Karma, Selenium** in **node.js**
 - **Java** as main backend server
- **ERICSSON (UK, SOUTHAMPTON) - [2014-04 - 2016-11]**
 - DigitalTV Embedded Software, Web Full-Stack and SDET Automation Consultant
 - I developed new web interface using: **node.js, React.js, JavaScript, HTML, json api**
 - I developed major Digital TV features on embedded level
 - **C++** in application and server code
 - low-level/driver code in **C** for video filters, graphics rendering (blitter, compositor), ST CPU drivers
 - DigitalTV specifics: osd graphics, teletext, subtitles, resolution scaling (SD/HD/1080p), DVB SI/PSI
 - Audio/Video decoding: IP/UDP, MPEG2/H264, SDI-SD/HD/3G, 4K
 - some **FPGA/VHDL** debugging
 - I made a lot of automation of development and auto-tests, **TDD - node.js, mocha.js, Python**
 - **C++/QT/GL**: picture quality analysis/comparison tools, GUI-s for software tools
- **SKY (UK, LONDON) - [2013-08 - 2014-03] - software engineer**
 - new Set Top Box application development: SkyQ, Ethan
 - modern animated GUI from scratch, **QT/GL** driven, performance focused, user input method innovations
 - **QT, C++, OpenGL (pixel shaders)**, optimisation of rendering in embedded OpenGL,
 - Digital TV specifics: **MPEG SI/PSI, DVB-S SI** models, MVC,
 - **TDD, automation**, unit tests, scrum, jira, svn, git,
 - **node.js, JavaScript** for internal website tools
- **PACE (UK, LEEDS) - [2013-01] - 2013-08] - software engineer in Pace, UK, Saltaire (Bradford/Leeds area),**
 - Set Top Box software development - embedded, api-server and web-browser,
 - main tasks:
 - implement and deliver software with customer requested features and fixes in **agile/scrum** based sprints,
 - issue identification, debugging, problem solving, tests on-site,
 - **test farms**: introducing **Test Driven Development** into existing software creation process, system & stability tests implementation
 - multi-site cooperation: Saltaire (UK), Helsinki (Finland), Warsaw (Poland) and France,
 - **techs**:
 - **C, C++, QT, QML**, svn, cvs, gstreamer, DVB, MPEG SI/PSI, scanning/tuning, Conditional Access, Nagra, Dbus, network PVR, gdb, **TDD**, multi-threading, dmalloc, DVB-C, DVB-T,
 - portal integration: VOD, QT webkit plugins, **JavaScript** API, **HTML5**, CSS, javascript portals code verification,
 - remote test-farm automation on customer's site: python, bash, ssh, scripting,
- **ADB - [2012-08 - 2012-12] - Senior Software Engineer in Advanced Digital Broadcast, Poland**
 - webkit browser integration into STB stack: **C/C++, QT**, http/https, embedded linux, optimization, tests, makefile,
 - web-portals for STB (VOD services, video/audio libraries, YouTube TV/Leanback etc.): frontend, **HTML5, JavaScript, Qt** webkit plugins, external APIs integration,
 - more techs: git, Gerrit, svn, auto-build, auto-test, TDD,
- **CODEPROJECT.COM - [2012-03 - 2012-07] - developer/architect for CodeProject.com (Canada)**
 - remote team in Zielona Góra (west Poland)
 - project description and goals
 - **launched a team** located in Poland dedicated for project,
 - designed & deployed high-volume web application (8M+ users) on **AWS Cloud**
 - **Node.js/Express** servers as core API, Ruby On Rails servers as application server, **MongoDB** as databases, cache by Redis, external applications by pub-sub style API with elements of **OAuth** authorization,
 - parts of common code for browser and server based on **JavaScript/CoffeeScript**,
 - heavy user-team, rights-roles, access-lists based environment, messaging, advanced payments management,
 - **TDD/BDD** driven,
 - main tasks:
 - **webservice API** definition, backend implementation (**nodeJS**), databases structure (**MongoDB**), frontend integration,
 - distributed system architecture design (API servers load balancing, databases sharding, external apps API, worker queues),
 - core API implementation in CoffeeScript for node.js server,
 - **auto-tests suite (1k+ tests)** design and implementation - mostly Mocha based (mixed TDD/BDD style),
 - **team leading (3 people)**,
- **TIETO - [2011-05 - 2012-03] - Lead Software Engineer in Tieto Poland (Wrocław, south-west Poland)**
 - Main tasks:
 - Design and implementation of software architecture and automated system/unit tests,

- Team leading related tasks, including knowledge exchange, coaching, etc.
- Significant projects:
 - **NOVEMBER 2011 – FEBRUARY 2012 (4 MONTHS) – Nokia** (Ulm, Germany)
 - Wifi and mobile 2G/3G internet connectivity middleware:
 - **C++, Qt-Network**, linux, connman, git,
 - system tests design and implementation, **TDD** introduction,
 - Wifi and 2G/3G test farm: architecture and implementation,
 - **C++/curl** implementation of controllers for access points from different vendors (DLink, Linksys, Cisco, etc.)
 - **team leading for system-test group**, multi-site coordination, multi-language team, scrum driven,
 - **AUGUST 2011 – OCTOBER 2011 (3 MONTHS) - Digital Route** (digitalroute.com):
 - Scalable, high performance distributed data processing in MediationZone – mostly related to intergration of multi-vendor 2G/3G billing systems:
 - **Java and APL** development, unit & system tests,
 - **distributed execution**: software auto-versioning, distributed configs, fault-control, etc.
 - performance oriented development,
 - team leading for 2 teams (development and test),
 - **JUNE 2011 – JULY 2011** – application and middleware development for STB (HDTV, QT, GUI, SH4, MIPS),
- **ADB - [2005-08 – 2011-05] - Software Developer in Advanced Digital Broadcast** (ADB Poland).
 - based in Zielona Góra, west Poland,
 - Overview:
 - Set-top box embedded code: **C, C++, Java (MHP), SH4 (RISC), Broadcom (MIPS) assembler**,
 - PC-based tools for automation and optimization of development and testing process: **C++, Java, PHP, svn, ant**,
 - Software architecture design, implementation, unit/system tests, **TDD**,
 - development on different layers:
 - **GUI applications (Java/C)**, user experience, GUI composition toolsets,
 - **middleware (OpenTV, MHP)** and porting layers, high-level subsystems/services,
 - **drivers** (native os, linux kernel),
 - Significant tasks, projects, experience
 - GUI related
 - good understanding of animation, graphical effects, pixel-level math, alpha blending, scaling, tap-filtering, shading, etc.
 - in cooperation with internal and external art designers implemented many good "look & feel" applications for several STB vendors mostly in UK, Norway, Italy, Switzerland, Spain, USA and Poland,
 - developed core architecture & implementation of cross-platform graphical stack for **HighDefinition TV** devices, including **drivers, PIL layers, MHP (Java)** and native API's, as well as user front-end application design,
 - development related to HighDefinition TV: **32-bit graphics, HD resolution, HDMI/HDCP** support,
 - designed and implemented fonts system (based on **freetype2 rendering**), image decoding (**png/jpg/svg**) and widget rendering (proprietary) subsystems,
 - good understanding of **graphic-related hardware** (blitters), implemented drivers for ST7100 and 7109 chips blitter (kernel-space and user-space), also some development for Broadcom blitters,
 - STB related
 - **DVB SI (Service Information)** scans and monitoring for terrestrial (DVB-T), satellite (DVB-S) and cable (DVB-C) environments, with country-specifics for Italy, Norway, Spain, Switzerland and UK,
 - digital television specifics: electronic program guide (epg/event information), parental control, languages selection for audio and teletext, hard-of-hearing, power saving modes,
 - good understanding of dvb/mpeg related processing with on-chip acceleration (transport stream parsing, demux, dma),
 - performance tuning, memory usage profiling, multi-threading, multi-level optimization of software stacks,
 - web-services intregration (VOD, remote recording, browser integration etc.),
 - cross-platform development, including web-servers and mobile integration into SetTopBox services,
- **2000-2005** - network administration of 80-100 workstation-sized network in technical education unit (ZSTiO school in Zielona Góra). Main tasks:
 - network maintenance: Windows Advanced Server Domain, Linux servers, routers etc.
 - development and maintenance of databases, software tools and a website (**C/C++/PHP**)
 - lot of teamply: introducing IT to non-IT people
- **1999-2000** – local McDonald's
 - my first real job with a lot of team-play :)

6 - EDUCATION

- 2001 – 2005 University of Zielona Góra - 5 years of university level education, **Master's Degree in Software Engineering**
- 1996 – 2001 Electronics & IT School in Zielona Góra - 5 years of secondary school, **Technical Degree in Computer Systems**