

**ROMAN PIETRZAK**  
**SOFTWARE ENGINEER**  
**VP OF ENGINEERING | LEAD ARCHITECT**

**LOCATION, AVAILABILITY, UPDATES**

**Remote**, based in Europe (UK and Poland)  
Availability: 1 week  
CV updated 2025-06-02

**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, SNOWFLOW
- **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**

- **GO LANCE [2025 MAR - NOW] - VICE PRESIDENT OF ENGINEERING | LEAD ARCHITECT**
- **RESPONSIBLE FOR THE SOFTWARE AND THE TEAM (40+ PPL)**
  - DEFINED THE STRUCTURE, EVANGELIZED COLLABORATION CULTURE, INTRODUCED PROCESSES - A BIT OF "AD-HOC CHAOS" BEFORE I JOINED
    - EXAMPLE: 4 QA PEOPLE WITHOUT ANY FORMAL PROCESS - WE DEFINED THE STRATEGY, TEST PLANS, REPORTING, RELEASE-ALIGNED CYCLES ETC.
  - INTRODUCING 2 AI PRODUCTS AND REDEFINING THE CORE PRODUCT FEATURES
    - INTRODUCED DATA PIPELINE: DBT, SNOWFLAKE, AIRFLOW
    - INTRODUCED AI, BASED ON BOTH TRANSACTIONAL DATA AND ANALYTICS DATA
      - EXAMPLE: "WHICH OF MY 1000 FREELANCERS HAD LOW PERFORMANCE THIS WEEK?" - LLM-STYLE TEXT-RICH ANSWER + HARD-DATA VISUAL ANSWER
- **THE OZONE PROJECT [2023 JUL - 2025 FEB] - HEAD OF SOFTWARE | LEAD ARCHITECT**
- **RESPONSIBLE FOR THE SOFTWARE STACK AND THE TEAM**
  - STRATEGY, EXECUTION AND 3<sup>RD</sup> PARTY INTERACTIONS
  - DELIVERED FAST AND SCALABLE SOFTWARE STACK - MILLISECONDS 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 3<sup>RD</sup>-PARTY DATA PIPELINE SOLUTION (SNOWFLOW) 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 3<sup>RD</sup> 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 3<sup>rd</sup> 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	GENERAL SOFTWARE DEVELOPMENT
<ul style="list-style-type: none"> <li>• front: <b>TypeScript</b>, <b>JavaScript (ES6)</b>, <b>React.js</b>, <b>Vue.js</b>, <b>Angular</b>, <b>Webpack</b>, CoffeeScript, WebGL, HTML/CSS, Websockets, Ajax, MVC frameworks, Canvas, jQuery, Stylus</li> <li>• server-side: <b>Node.js</b>, <b>Kafka</b>, Python, PHP/Laravel, Amazon Cloud (AWS/SDK/CDK), <b>MongoDB (NoSQL)</b>, MySQL, C++</li> <li>• experience with non-trivial performance goals, examples:               <ul style="list-style-type: none"> <li>• <b>website load below 50ms</b></li> <li>• <b>websockets</b> for all browser-server interaction</li> <li>• <b>webGL</b> as layout/design renderer</li> </ul> </li> <li>• auto-tests: <b>Selenium</b>, <b>Jest</b>, <b>Mocha.js</b>, <b>node.js/python</b> scripted</li> <li>• CROSS-BROWSER DEVELOPMENT, BROWSER INTERNALS, STANDARDS</li> <li>• NON-TYPICAL ENVIRONMENTS               <ul style="list-style-type: none"> <li>• QT-EXTENDED WEBKIT BROWSER RUNNING ON SETTOPBOX</li> <li>• WEB-API MANAGEMENT FOR EMBEDDED DEVICES LIKE STBs, RASPBERRY Pi, ETC.</li> </ul> </li> <li>• OLD-SCHOOL: FLASH, ACTIONSCRIPT - (2000-2006) EXPERIENCE IN OPTIMIZATION OF LARGE ACTIONSCRIPT APPLICATIONS</li> </ul>	<ul style="list-style-type: none"> <li>• Scale: milliseconds processing, 100's of servers, 100k's of req/s</li> <li>• Databases: SQL and NoSQL (mysql, mongoDB)</li> <li>• languages:               <ul style="list-style-type: none"> <li>• <b>node.js</b>, <b>Javascript</b>, <b>Typescript</b></li> <li>• Python, Java</li> <li>• C AND C++ FOR EMBEDDED DEVICES AND DESKTOP (PC)                   <ul style="list-style-type: none"> <li>• QT IS MY THING, BUT WORKED WITH OTHER FRAMEWORKS TOO</li> <li>• DIRECTX AND GL EXPERIENCE</li> </ul> </li> <li>• BARE METAL AND DRIVERS CODE</li> </ul> </li> <li>• PHP</li> <li>• JAVA FOR PC, SET TOP BOX, MOBILE</li> <li>• ASSEMBLER FOR x86, SH4, MIPS, ARM AND OLD-SCHOOL</li> <li>• OLD-SCHOOL: C++ BUILDER, PASCAL/DELPHI, BASIC, AMOS, C64</li> <li>• techs and tools:               <ul style="list-style-type: none"> <li>• <b>automation</b>, <b>TDD/BDD</b>, <b>development in tests (SDET)</b></li> <li>• GIT, SVN, CVS AND CODE REVIEW TOOLS,</li> <li>• Jenkins, CMAKE, MAKEFILE, CONTINUOUS INTEGRATION,, ANT, OPENSUSE BUILD SYSTEM (OBS),</li> <li>• JIRA, Asana, BASECAMP, BUGZILLA, RTC</li> <li>• Kanban, Agile, Scrum</li> </ul> </li> </ul>
DEVOPS / INFRA	EMBEDDED DEV
<ul style="list-style-type: none"> <li>• <b>AWS</b> (CDK/SDK, EC2, FARGATE, ECS, SERVERLESS), <b>GCP</b></li> <li>• deployment, helm, kubernetes, docker, Rancher</li> <li>• performance &amp; monitoring Grafana, Prometheus, Jmeter</li> <li>• SCALING, SHARDING, PARTITIONING, LOAD-BALANCING – ACHIEVING HIGH-SCALE PERFORMANCE GOALS</li> <li>• SECURITY, SSL, HTTPS, X.509 CERTIFICATES</li> </ul>	<ul style="list-style-type: none"> <li>• IoT CAMERAS/CAR DEVICES</li> <li>• BROADCOM AND ST SoC FOR SETTOPBOX, FROM DRIVER-LEVEL TO GUI APPLICATIONS</li> <li>• LPC CORTEX M0 PURE-C BARE-METAL IMPLEMENTATION, 1-WIRE, RS485, RF, ETC.</li> <li>• RASPBERRY-Pi, PC CARDS, MINOR FPGA/VHDL</li> </ul>
GFX RENDERING	SETTOPBOX & AUDIO/VIDEO
<ul style="list-style-type: none"> <li>• LOW-LEVEL: FRAMEBUFFER, BLITTER, FREETYPE2, MULTI-CORE RENDERING,</li> <li>• MODERN ANIMATED GUI FRAMEWORKS, QT – ARCHITECT LEVEL</li> <li>• OPENGL, WebGL, GLSL, VERTEX/PIXEL/FRAGMENT SHADER, 2D/3D, DIRECTX,</li> </ul>	<ul style="list-style-type: none"> <li>• ALL LAYERS: APPLICATIONS, DRIVERS, MIDDLEWARE (MHP, WEBKIT)</li> <li>• GUIs FOR SETTOPBOX: C/C++, Qt, GL (SHADERS), JAVASCRIPT (HTML) AND JAVA (MHP)</li> <li>• DIGITAL TV SPECIFICS: MPEG, DVB-T, DVB-S, DVB-C, ATSC, (DE)MULTIPLEXERS, PSI/SI, ETSI 300 468, CA, TELETEXT, SUBTITLES               <ul style="list-style-type: none"> <li>• DELTACAST CARD: SDI VIDEO ANALYSIS APPLICATION - QT/GL</li> </ul> </li> <li>• OS/21, LINUX, STAPI, BROADCOM APIs</li> </ul>
GUIs AND UIX	OTHER
<ul style="list-style-type: none"> <li>• GUI DESIGN WITH PROCEDURAL GRAPHICS AND ANIMATION</li> <li>• QT/QML, GL, JAVA SWING, C++ BORLAND VCL, DIRECT WINAPI AND FLASH (ACTIONSCRIPT),</li> <li>• 2D/3D REALTIME CHARTING OF HUGE NUMERICAL DATABASES (STOCK PRICES, GOVERNMENT STATS, COMPANY DATA ETC.)</li> <li>• EMBEDDED GUI DESIGN FOR SETTOPBOX</li> </ul>	<ul style="list-style-type: none"> <li>• networking: websockets, ipv6, http, https, ssl, curl, bson, graphQL,</li> <li>• rest, RPC, WININET, WIFI STACK, RADIUS, QNETWORK,</li> <li>• WINAPI: GDI, DIRECTX, WININET, SHELL INTEGRATION, SYSTEM-SERVICES,</li> <li>• LINUX: GDB, KERNEL/DRIVERS AND USER-SPACE DEVELOPMENT,</li> </ul>
<ul style="list-style-type: none"> <li>• <b>technical experience specifics</b></li> </ul>	

- **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** – Calcula.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** Calcula.com and Calcula.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 business 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

- **CALCULLA.COM [2015 – 2021] – WEB FULL-STACK TECHNICAL LEAD**
  - Leading a team of developers in **Agile + Kanban**, re-building Calcula website in **node.js** (it was **PHP** before)
    - Huge web application:
      - 300+ calculators (**JavaScript**)
      - backend microservices supporting variety of business 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 FOUNDATION [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 3<sup>rd</sup> 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/scrumb** 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 intregation (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 teamplay: 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**