Petr Kubizňák

Personal Information

Name, Title	Petr Kubizňák, Ing.
Date and Place of Birth	February 6, 1989, Dvůr Králové nad Labem, Czech Republic
Marital Status	Married
Nationality	Czech

Contact

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Job Experience

2014–2019 **Embedded SW Engineer**, *Elnico s.r.o.*.

Full-stack application development on ARMv7 platform: NXP Kinetis K70 (Cortex M4), NXP Vybrid VF6 (Cortex A5 + Cortex M4), NXP i.MX SoloX (Cortex A9 + Cortex M4). Linux: kernel configuration, BSP (device tree), patching, drivers development and bugfixes, distribution building (Yocto Project), system services, busybox, gstreamer, Qt graphical toolkit, HTTP server. MQX RTOS: BSP, low-level drivers, library development, MCC, D4D/eGUI graphical library. FreeRTOS: low-level drivers, RPMSG. U-boot: BSP, configuration and patching. C, C++, Bash, JavaScript, jQuery, CSS.

Desktop applications: Multiplatform graphical tools based on Qt graphical library. C++.

SQM4 SOM platform: BSPs, customer support, hardware testing, e-shop maintenance (www.sqm4.com), propagation (Electronica trade fair 2014 and 2018).

2010–2014 **Embedded SW Developer**, *Elnico s.r.o.*, part-time job.

Embedded system application development - ARMv7 and OS Linux / MQX RTOS.

2006–2010 **Web Developer**, *Elnico s.r.o.*, part-time job.

Design, development and administration of company websites.

Projects

2015–2019 **FCM, FLG, RLG, FGE**, *proprietary embedded devices.*
Various laboratory devices for automotive lights testing. Design and implementation of application logic and rich web user interface for control of headlights and rear lights using PWM, CAN and LIN. Dual-core application running on the NXP Vybrid VF6 heterogeneus MPU. MQX RTOS. C, JavaScript (jQuery), CSS.

2016 **Camibrator**, *proprietary desktop tool.*
Complete design and implementation of a multiplatform desktop tool, used for precise object position calibration from camera for industrial 3D printers. Qt, OpenCV, uEye. C++.

2015– **Automatic Embedded System for Surveillance of Birds Nesting in Boxes**, *Dissertation Thesis.*
Redesign and extension of the diploma thesis project for Birds Online project (www.birdsonline.cz). Complete SW design and implementation. Linux and FreeRTOS running in parallel on the NXP i.MX SoloX hegerogeneus MPU. Online video streaming, automatic data submission and remote maintenance. Web-based user interface (lighttpd), SNMP server, OpenVPN. C, C++, Bash, JavaScript (jQuery), Perl.

2013–2014 **Embedded Computer Including Software for the Intelligent Bird Nesting Box**, *Diploma Thesis.*
HW and SW design and implementation. Embedded computer with heterogeneus dual core ARM Cortex A5 + ARM Cortex M4 microprocessor running Linux OS and MQX RTOS. I/O communication (RS485, GPIO, I2C), camera communication (V4L), application logic, multicore communication, FTP. C and C++ programming languages.

2009–2011 **Camera Recognition of Game Elements in Eurobot Contest**, *Bachelor Thesis.*
Design of a new classifier of camera frames to classes according to configuration of game elements, and its implementation in C language using OpenCV library.

Education

2014– **Ph.D.**, *Faculty of Environmental Sciences, Czech University of Life Sciences Prague*, Prague, Czech Republic, Expected graduation September 2019.
Combined Studies.

2011–2014 **Master of Science (Ing.)**, *Faculty of Electrical Engineering, Czech Technical University in Prague*, Prague, Czech Republic, Graduated summa cum lauda.
Master Study Programme: Open Informatics, specialization Computer Vision and Image Processing.

2008–2011 **Bachelor of Science (Bc.)**, *Faculty of Electrical Engineering, Czech Technical University in Prague*, Prague, Czech Republic, Graduated summa cum lauda.
Bachelor Study Programme: Software Technologies and Management, specialization Intelligent Systems.

2002–2008 **Grammar School**, *Gymnasium*, Dvůr Králové nad Labem, Czech Republic.

International Experience

2014 **Athens**, *Universidad Politécnica de Madrid*, Madrid, Spain.
1 week long international course Mathematics and Beauty.

2011 **Erasmus**, *Cork Institute of Technology*, Cork, Ireland.
3.5 months long student exchange programme.

2008 **Language Course**, *Sprachcaffe*, St. Julian's, Malta.
3 weeks long English language course.

Languages

Czech	Native
English	Active (B2)
French	Elementary

Computer Knowledge

Programming/Scripting	- C, C++: commercial applications, - HTML, CSS, jQuery, Javascript: webserver-based GUI, web, - Bash: init scripts, utilities, - Device Tree: Linux BSP
Operating Systems	- office: Linux, Windows - embedded: Linux (ARMv7) - real-time: MQX, FreeRTOS, baremetal
Linux Build Tools	Yocto Project
Libraries	Qt, Gstreamer, OpenCV, uEye, MCC, RPMSG
Development Tools	IAR Embedded Workbench, Qt Creator, Eclipse, git, hg (mercurial), Redmine
Virtualization Tools	Docker, VirtualBox
Office Applications	LibreOffice, MS Office, LyX, LaTeX (basics)
Graphics Applications	GIMP, Photoshop, Inkscape

Publications

2019 Kubizňák, P., W. M. Hochachka, V. Osoba, T. Kotek, J. Kuchař, V. Klapetek, K. Hradcová, J. Růžička, and M. Zárybnická. 2019. Designing network-connected systems for ecological research and education. Ecosphere 10(6):e02761. 10.1002/ecs2.2761

2016 Zárybnická, M., Kubizňák, P., Šindelář, J., Hlaváč, V. (2016) Smart nest box: a tool and methodology for monitoring of cavity-dwelling animals. Methods in Ecology and Evolution 7(4): 483-492. DOI: 10.1111/2041-210X.12509.

2015 Šindelář, J., Kubizňák, P., Zárybnická, M. (2015) Sequential polyandry in Tengmalm's Owl female during poor rodent year. Folia Zoologica 64: 123-128.

Certificates and Awards

Upsilon Pi Epsilon	Membership in International Honor Society for the Computing and Information Disciplines
Dean's Prize	Award for outstanding diploma thesis

Other Skills

Driving License	B