Pablo Slavkin
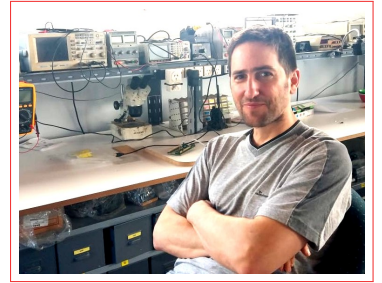
Resume

Dos Valles, G01, Bariloche
Río Negro, Argentina
(+54)(9294) 485 0008
slavkin.pablo@gmail.com
github
linkedin
13/12/1976

"In the tools, as in the instruments, what matters is the artist"

Presentation

I'm an electronic engineer from School of Engineering and Technology ITBA, with a Master Degree in Embedded Systems from University of Buenos Aires, UBA.

I developed my career working in product development area of several national companies and in R&D in state institutions.

For some time I was in charge of an electronic engineering studio offering electronic design and production services and I'm currently working as a contract/freelance electronic engineer.

I work daily designing embedded electronic equipment executing tasks such as:

- Taking requirements and planning acceptance tests of hard and soft.
- Schematic design, PCB, simulations, assembly, 3D modeling and machining.
- Coding for real time in C / C ++ over bare metal, RTOS and embedded Linux.
- Bash and Python scripting over Linux and embedded Linux.
- Codification and execution of the unit tests and management of continuous integration tools.
- Assembly and start-up of prototypes and assembly line documentation.

I am very pragmatic, committed and enjoy solving complex problems in a creative way by exchanging ideas with my peers. I prefer down-top developments using Agile concepts to keep the product functional from the beginning.

I have an electronics workshop showed in figure 1 and in the video, with tools as:

- Assembly line of SMD/TH plates, pasta stencil, pick and place, reflow oven and wave soldering machine.
- Reworking and manual welding tools.
- Stock of SMD and TH materials of current and specific use.
- CNC machining center.
- Machine for cutting and laser engraving.
- Several machines for 3D printing.
- Generators, Oscilloscopes and Advanced Instrumentation for measurement and diagnosis.
- Electronic tools for firmware development.

These tools, my experience, technical ability and frequent academic updating allow me to unwrap in most instances of the development of a professional embedded electronic equipment.

Just follow the links in each section to see videos pdf's and detailed information.

You could check my up-to-date resume here.

figure 1: Development lab at Bariloche, 2021. Video lab. 2019, Video lab. 2021

Education

2019–2021	**Master's degree in Embedded Systems** , *UBA - University of Buenos Aires* , Buenos Aires , *Average 9.28* See program , See analitics .
2018–2018	**Specialization in Embedded Systems** , *FIUBA - University of Engineering of Buenos Aires* , Buenos Aires , *Average 9.33* See program .
2008–2012	**Doctorate in Engineering** , *UTN - National Technological University FRBA* , Buenos Aires , *Average 10 on 3 approved subjects + 3 late due* . Mention Digital processing of images and signals. Suspended by moving to another city. See program
1996–2005	**Electronic Engineering** , *ITBA - Technological Institute of Buenos Aires* , Buenos Aires , *Average 6.5* See program .
1990–1995	**Electro Mechanical Technician** , *ENET Nº1 Brigadier General Pascual Echagüe* , Concordia, Entre Ríos , *Average 8.5* .
1982–1989	**Primary School** , *Velez Sarsfield School* , Concordia, Entre Ríos , *Average 8.5* .

Experience

Professional

2021–Present	**Embedded firmware and software developer** , *PAL Robotics* , Barcelona, España . I work as a senior embedded firmware and software developer for the boards utilized on the robots. I work on the field of motor control loops, multicore SoC's bootloaders, real time operatig systems and bring-up of new boards. I work with Agile driven, multidisciplinar group and exciting technologies. See portfolio.
2020–2021	**Lead Embedded Software Engineer** , *Novo Space* , EE.UU, Argentina . As the first employee of the start-up, I worked as low level firmware, real time OS, bootloaders mainly u-boot, embedded Linux and bring up of new complex hardware boards. I work remotely for 12 month, the company grew up to more than 15 employees. See portfolio.
2020–2020	**Design and development of BLDC power stage** , *Engineered Arts* , England . I work as a hardware engineer, making the electronic design, choosing componentes and topology for the power stage of a new BLDC servo drive. I work remotely with a team of specialists. See portfolio.
2019–Present	**Freelance Electronic Engineer** , , . Personal entrepreneurship Electronic design services, hardware, firmware and electronic equipment.
2019–2020	**Development of a PMSM servomotor controller** , *Nanocut* , Chisináu, Moldavia . For a company in the industrial machinery field, I work in the development of an integrated servo controller for a permanent magnet synchronous motor. It'll be used for the improvement of the actual machinery. See portfolio.
2019–2019	**Consultant and CNC software development** , *Wolfcut* , Valencia, España . I worked in the implementation of a production line management software tool. I've also developed a plugin for improve the capabilities of the CNC software, adding an automatic tool changer, an automatic tool measurement, and others features. See portfolio.
2011–2019	**Development and production of electronic equipment** , *Grupo Noto* , Argentina . I develop and manufacture a whole line of aesthetic electro medicine electronics equipment, hardware, firmware and production. See portfolio.

2012–2019 **Development and production of electronic equipment** , *Piscina Natural* , Argentina .
In conjunction with the company was developed a system for the generation of chlorine from saline water was developed to keep the pools clean. See portfolio.

2011–2016 **Consultant and developer of electronic equipment** , *Softron* , Argentina .
Consulting and development of electronic equipment and solutions for energy measurement and monitoring using Zigbee wireless and GSM technologies. See portfolio.

2011–2017 **Consultant and developer of electronic equipment** , *Grupo Koner* , Argentina .
Consulting and development of equipment and electronic solutions for the automatic vehicle location, AVL. I worked mainly in the development and integration of an RFID card reader for drivers registration. See portfolio.

2005–2019 **Director in engineering company** , *disenioconingenio* , Argentina .
Personal entrepreneurship Engineering study that offers electronic design services to companies, with ability to develop and manufacture electronic equipment, hardware, firmware, software, mechanics, PCB routing, assembly of PCB's SMD and TH, 3D printing, CNC machining, laser cutting and engraving and commercialization of equipment for access control RFID, monitoring of Ethernet temperature, automation of machines, converters of protocols, etc. See portfolio.

2011–2014 **Consultant and developer of electronic equipment** , *Seconsat* , Argentina .
Consulting and development of electronic accessories for the AVL business. I work mainly in a new multi sensor wireless dongle for AVL integration. See portfolio.

2003–2005 **Electronic equipment developer** , *Digicard* , Argentina .
Company referring to the national level in the area of access control. I've Worked on the development of an RFID reader of 125khz for the line of access controllers. I participated in all the stages since the requirements request, schematic design, PCB layout, prototype, start-up, firmware, and production documentation The reader is actively actively marketed by the company. See portfolio.

2002–2003 **Firmware developer for microcontrollers** , *Pump-Control* , Argentina .
Company dedicated mainly to the design, development and production of electronic controllers for the distribution of hydrocarbons. I've worked on the area of firmware development for 8bit microcontrollers of the Atmel line, implementing 1-Wire communication protocols, access control and dispenser control fuel.

Teaching

2020–2021 **Digital signal processing, introduction course, upgraded version**, *University of Buenos Aires, UBA*.
Within the framework of the Master in Embedded Systems of the UBA, MSE, a course on digital signal processing applied to embedded systems was taught, including subjects such as: quantization, convolution, correlation, discrete Fourier transform (DFT,FFT).See program.See recorded classes.See material's course

2020–2020 **Digital signal processing, introduction course**, *University of Buenos Aires, UBA*.
Within the framework of the Master in Embedded Systems of the UBA, MSE, a course on digital signal processing applied to embedded systems was taught, including subjects such as: quantization, convolution, correlation, discrete Fourier transform (DFT,FFT).See program.See recorded classes.See material's course

2017–2017 **Introduction to robotics** , *Siglo XXI School* .
A day of introduction to robotics was given for students from the third to fifth year, showing the history, basic concepts and culminating with a practice in different commercial platforms See certificate.

2004–2004 **Altera FPGA programming intensive course using Quartus II** , *ITBA* .
An introductory course with practical activities was carried out using an Altera evaluation board. See material.

Research

2015–2016 **Scholar in the National Atomic Energy Commission**, *CNEA*.
I worked as a fellow in the completion of a fully developed PET (Positron Emission Tomography) in the center on which the doctoral thesis plan is developed. Particularly, work is done in the area of acquisition and processing of digital signals on high performance FPGA. The scholarship is terminated doubt as a move to another city. See portfolio, see material 2015 , see material 2016.

2009–2009 **Assistant in the Research Center of Lasers and Applications**, *CITEDEF*.
I worked as an assistant of Dr. Jorge Codnia and Lic. Laura Azcárate in the assembly of a flow condenser, which with the help of a laser produces isotopes of interest, and the first advances in a new mass spectrometer of flight time. See material.

Tutorials and jury

2021–2021 **Master thesis jury of Esp. Lic. Leopoldo A. Zimperz in his work**, *Easy installation access control with remote administration.*, Universidad de Buenos Aires, UBA.

Within the framework of the thesis defenses of the *Master's Degree in Embedded Systems of the UBA, MSE*, I participated as a master's thesis jury. see thesis, see presentation.

Courses and seminars

2020 **LATAM 2020 Entrepreneur Competition** , *MIT - ITBA*, 8hs, I participated as a jury of the LATAM 2020 contest, organized between MIT and ITBA. I analyzed innovation and entrepreneurship projects from Latin America. See certificate , See details .

2018 **LATAM 2018 Entrepreneur Competition** , *MIT - ITBA*, 8hs, I participated as a jury of the LATAM 2018 contest, organized between MIT and ITBA. I analyzed innovation and entrepreneurship projects from Latin America. See certificate , See details .

2017 **LASCAS 2017 Tutorials: Dependable Digital Systems and Fault Tolerant FPGA Design**, *INVAP, Bariloche*, 8hs.

2017 **SASE 2017, Argentine Symposium of Embedded Systems**, *UBA*, 8hs, See certificate.

2016 **SASE 2016, Argentine Symposium of Embedded Systems**, *UBA*, 8hs, See certificate.

2015 **Doctorate PSI Meeting: Models, Simulation and Fabrics Engineering**, *Favaloro, GIBIO 2015*, 8hs, See certificate .

2015 **Advanced techniques for digital design**, *UNICEN, National University of the center of Buenos Aires, Argentina* , 40hs, Advanced virtual course of techniques of digital design by engineer Guillermo Jaquenod. See program.

2015 **SASE 2015, Argentine Symposium of Embedded Systems**, *UBA*, 6hs, See certificate.

2013 **SASE 2013, Argentine Symposium of Embedded Systems**, *UBA*, 18hs.

2012 **Introduction to LATEX**, *UP Palermo University, IEEE-UP Student Branch*, 2hs, See certificate.

2012 **First days of signal and image processing**, *UTN, GIBIO 2012*, 8hs, See certificate.

2012 **SASE 2012, Argentine Symposium of Embedded Systems**, *UBA*, 18hs.

2011 **SASE 2011, Argentine Symposium of Embedded Systems**, *UBA*, 18hs.

2010 **SASE 2010, Argentine Symposium of Embedded Systems**, *UBA*, 18hs.

2008 **Conference on wireless technologies of Digi RF**, *EDE2008 Electronic Design Expo*, 6hs, See certificate.

2007 **Practical theoretical course of screen printing oriented to the manufacture of PCBs** , 32hs, See certificate.

2007 **Analog performance seminar using Silabs microcontrollers** , 8hs, See certificate.

2006 **Launch of Freescale RS08KA microcontrollers, accelerometers and sensors** , 8hs, See certificate .

2006 **Releases Freescale Coldfire microcontrollers 32 bits** , 10hs, See certificate .

2004 **Rabbit microprocessors and Dynamic C** , 24hs, See certificate .

2002 **Practical theoretical course IA, Artificial Intelligence** , *ITBA*, 18hs, See certificate.

1995 **Amateur radio course with licensing LU9JGM** , *Radio Club Concordia (LU9JJ)*, 48hs, See certificate .

Awards

2020 **Codility Palladium Challenge, Codility**, *Golden Award*, , .
See certificaue.

2002 **Initiation in research and development I+D ITBA** , *1 th prize* , , .
Design and Simulation of a pipeline-structured Floating Point Unit for high performance general purpose processors See material.

2001 **Battle Tek robots championship, ITBA** *Ingenio en Acción* , *3 th prize* , , .
Discotech Robot A fight robot was designed and manufactured based on a high speed rotating disk with 2 protruding edges that impact against the adversary and a pneumatic ramp. See certificate , see news.

Works and Publications

2021 **Visual alignment using registration marks for a computer numerical controled machine CNC** , *Embedded systems Magister, FIUBA* , , .
Final work of the magister course in embedded systems, Director: MEE. Ing. Norberto M. Lerendegui (IEEE) see material , see presentation , see thesis defense , see videos , see official material

2018 **Three Axis CNC Machine Controller** , *Embedded systems Specialization* , , .
Final work of the specialization course in embedded systems, Director: Ing. Juan Manuel Cruz see material , see presentation , see thesis defense , see videos , see official material

2010 **Smoothing of images by inhomogeneous diffusion** , *Biomedical image processing, UTN* , , .
Final work Processing of biomedical images, Tutor: Dr. Castro See material .

2008 **Study of photo thermal techniques applied to the measurement of gas flow.** , *CITEDEF* , , .
I was presented under the tutelage of Dr. Francisco Manzano and as goal of approval of Optoelectronics II. See material .

2004 **Design and implementation of a dynamic screen based on 3200 filament lamps with 16 gray scales and 20fps updatable by ftp.** , *LampMatrix, Thesis, ITBA* , , .
Under the tutelage of Professor Villamil, an advertising screen based on filament lamps was designed and manufactured entirely. See video , See material .

2003 **Design and Simulation of a pipeline-structured Floating Point Unit for high performance general purpose processors** , *JAIIO 32 th Argentine Conference on Informatics and Operational Research* , , .
See material .

2003 **Selection of the Optimum Stage Number in Pipelined Floating-Point Units** , *CACIC, Argentine Congress of Computer Science* , , .
See material

Technologies Experience

Programming Languages

Advanced	C, C++, Python, ASM assembler, Verilog, VHDL, Octave
Medium	C#, Pascal, bash, makefiles, openHab, flask, Javascript, HTML, css,
Basic	Java, php

Operating Systems

Advanced	Linux (Manjaro, Debian, Crunchbang, Bunsenlabs, Ubuntu, Slackware), FreeRTOS, Windows(Win10, Seven, XP, NT, Server2003)
Medium	FreeBSD
Basic	OSEK, plan9, VXWorks, RTems

Outstanding Computer Software

	vim[15]	**git**[8]	mercurial	bash
	ssh	anaconda	pyfda	jupyther
	ipython	screen	**tmux**[6]	Kicad
	Allegro PCB Router	Orcad16 Design CIS	Orcad16 Layout	Orcad16 Pspice
	gnumeric	mutt	LATEX	Cura
	Pronterface	Freecad	Slic3r	Mach3
Advanced	LinuxCNC	Rhinoceros	RhinoCam	Flash MX
	Borland C++ Builder	gcc	gdb	pudb
	openocd	ncurses	cdk	Microsoft Visual Studio
	Libero 12.x	Softconsole	Xilinx (ISE y Vivado)	gtkwave
	icarus	ghdl	cocotb	redmine
	cups	Swat	Samba	ceedling
	crypsetup	Wireshark	VirtualBox	pass
	gnuplot	LibreOffice	Freecad	numpy

Medium	OpenOffice	Eclipse	Matlab	Jenkyns
	Mathcad	quemu	Arduino IDE	svn
	ffmpeg	Openscam	Webadmin	SonarQube
	gitlab	gitlab runners	CD/CI	

| Basic | Quartus II, Delphi, Blender, Krita, odoo ERP |

Experience in software patterns and techniques

| Advanced | linux device drivers | device tree | Das U-Boot | buildroot |

| Medium | NASA CFS |

| Basic | Yocto | nmigen |

Communications protocols and digital techniques

Advanced	Ethernet	lwIP	TCP	IPv4		SNMP	SMTP	NTP	ARP	UDP	SCI
	SPI	I2C	LVDS	USB FS/HS		Zigbee	RFID		PWM	ADC	DAC	1-Wire
	RS232	RS485	PoE+	MQTT							

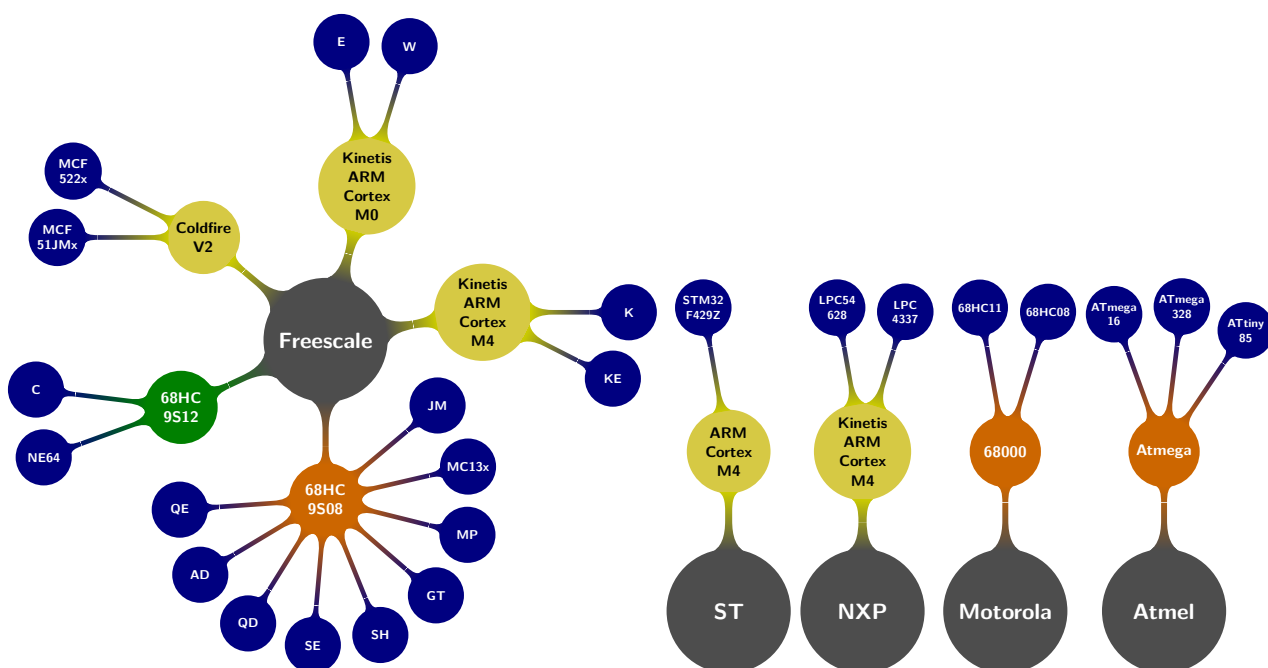| Medium | IPv6 | CAN | 6LoWPAN | IEEE 802.15.4 | I2S | Radius | Modbus |

| Basic | HTTP | Lora | MIPI |

Other technologies of interest

| Advanced | Edding CNC macro programming language, electronic board SMD mounting line, manual PCB soldering, infrared oven PCB soldering, FDM 3D printer, rigid silkscreen, PCB silkscreen, CNC machine hangling, laser cutter handling , machine tool handling |

| Medium | PCB manufacturing, arc welding, lathe hangling |

| Basic | |

Microcontrollers, microprocessors and FPGA architectures experience

At least one project developed using one of these:

Colors ● 8 bits ● 16 bits ● 32 bits ● FPGA ● SBC (single board computers)

Microcontroller and FPGA families:
- Rabbit: Rabbit (Rabbit 2200)
- Texas: ARM Cortex M4 (CC3200, CC3220, TM4C1294, TM4C123), C2000 Real-time (F28379D, F2838x), MSP430 (F147, F2013)
- Microchip: 168 (Pic168xa)
- Motorola: 68000 (68HC11, 68HC08)
- Microsemi FPGA: SoC M2GL (M2GL025-VF256)
- Xilinx: Fpga Spartan (Spartan3, Spartan6), Fpga SoC (Zynq-7020)
- Altera: FPGA Flex (Flex 10K10)
- Beagle board: Beagle bone green, Beagle board XM, Beagle bone Black, Beagle bone Black WL, Pocket beagle

---

Idioms

Spanish	Oral/Reading/Writing Advanced	*Native tongue*
English	Reading Advanced Oral/Writing Medium	*TOEIC 2005–785 See certificate*
Hebrew	Reading Medium, Oral/Writing Basic	*Full Hebrew primary school*
Russian	Reading, Oral and Writing Basic	*Personalized curse at Moldova*

Sports and recreational activities

2016–2017 **Basketball** , *Bariloche* , Nahuel sport club, facebook .
Training in the club's first division squad.

1983–1994 **Basketball** , *Concordia* , J.N.Bialik , .
Training from mosquito category to be part of the first division squad.

1995–2004 **Basketball** , *Buenos Aires* , University Basketball, ITBA .
Training on the campus throughout the whole race.

1994–Presente **Cycling** , , , .
Competition in cross-country category sub-23, competition in category sub-30 trialbike, amateur cycling to the present.

2014–Presente **Guitar** , , , .
Amateur learning of electric guitar and music.

Other activities and interests

- Physics
- Astronomy
- Motorcycling
- History of science
- Philosophy
- Cycling