Pedro Llanos Arroyo

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sirdrope.github.io

About me

I'm a Computer Science and Computer Engineering living in Barcelona. I'm interested in Artificial Intelligence Systems, Multi-Agents Systems, Fuzzy Logic, Deep Learning, Reinforcement Learning, Signals Processing - such as Image, Video, Sound, Speech, Position, Communications, Temperature, Humidity, Pressure, Touch, Lidar, Sonar, Laser -, Control Theory - such as Linear or Non-Linear PID Control Methods, Path Planning, Kalman Filter -, Dynamics Systems - such as Navier-Stokes equations -, Robotics - such as Flying, Floating, Leggeds, Wheels, Arms, Head -, Avionics, Satellites, Rockets, Space, 3D Heterogeneous Simulations with Dynamics Systems in Unreal Engine, Real-Time OS, Heterogeneous High-Performance Computing (HPC) - such as Local Cluster, Cloud Computing (Google Cloud, AWS, Azure), Edge Computing, Distributed Computing -, Decentralised or Distributed Systems - such as key-value MapReduce, Raft or Multi-Paxos consensus, Chubby, ZooKeeper, etcd3 -, Low-Power Hardware - such as MultiCore-DSP, VPU, FPGA Xilinx, Arm Neon and Mali GPU -, Design Schematic of Embedded Systems (PCB) - such as Kicad PCB Design, PCB Manufacturing -.
After a few years of preparation, the time has come. Today, I feel comfortable saying that I'm ready to implement all those ideas that I have always wanted to do. At this stage, I will continue learning, improving, and above all, maturing as a professional. I would like to continue independently, creating my projects and companies in the short and medium-term. The mission is to build safe artificial general intelligence that benefits all society to solve the world's most significant problems by collaborating with passionate people about what they do. However, I still have to grow a little more. To do that, I will collaborate with other companies with a similar philosophy, and I will looking for amazing people.

Education

2014–20 **Computer Science and Computer Engineering** at Polytechnic University of Catalonia (UPC) in Barcelona. My thesis was titled The Cooperative Negotiation and Coordination Approach in a Multi-Agent System for a Dynamic Real-Time Environment and is available through the UPC Research Archive.

2011–13 **Senior Technician in Telecommunications and Computer Systems** at IES Anna Gironella of Mundet in Barcelona.

Non-official Education (some subjects as a listener)

2019–20 **Degree in Data Science and Engineering** at Polytechnic University of Catalonia (UPC) in Barcelona.

2018–19 **Degree in Electronic Telecommunications Engineering** at Polytechnic University of Catalonia (UPC) in Barcelona.

Work Experience

2021–21 **JSNP Internship** at GNSS Academy (Join Satellite Navigation Program)

SERVUS: Service Volume User SBAS. Development of a tool for SBAS Service Performance Monitoring, Characterization and Prediction at Signal-In-Space and User level (Availability, Continuity, Accuracy and Integrity) using EGNOS/WAAS Real data campaign.

PETRUS: Position Engine Tool Receiver User SBAS. Development of the User Positioning Engine and related performances at Position level of an SBAS Mono-Frequency Receiver using EGNOS RIMS Real Data from all Stations across the ECAC.

A complete GNSS training including the following modules:
· GNSS Systems, Fundamentals and Observables
· Ranging Error Sources Definition and Models
· How to Solve for PVT Equations with estimation filters LSQ, WLSQ, KF.
· GNSS Signals Structure and Frequencies
· GNSS Receivers Architecture (Acquisition, Tracking Loops: DLL, PLL)
· Introduction to Precise Orbit Determination (POD) for GNSS Orbits
· Ionosphere in GNSS: Impact, disturbances, mitigation and estimation
· SBAS fundamentals and Corrections Content (MOPS DO-229D/E)
· EGNOS System, Architecture, Services, Applications, Performances
· CPF algorithms EGNOS V2/V3 (CPV/COBS, ODP, IONO, CLK, UDRE/OOCRE)
· Galileo System, Architecture and Services (OS, SAR, HAS, CAS, PRS)
· Galileo GMS Elements, and Ranging Accuracy Performances
· GNSS Tools for EGNOS Performance Qualification
· Differential Positioning Systems DGNSS/DGPS/SBAS
· Precise Positioning: PPP/RTK (Carrier Phase Ambiguities fix resolution)
· ARAIM: Advanced Receiver Autonomous Integrity Monitoring for Aviation.
· IGS Reference Products Standard formats (RINEX, SP3, CLK, IONEX, ATX, DCB...)
· GNSS Market and Current Initiatives/Programmes

2016–18 **Systems Administrator** (UPC Intern Support) at Department of ETSEIB Mathematics in Barcelona.

Languages

Spanish | Catalan (Native)
English (Intermediate to First)
2015–16 Certificate of Completion English Course - First (60h) at ChapterHouse Dublin in Ireland.
2012–13 Certificate of Completion English Course - Pre-Intermediate (60h) at CCD Central College Dublin in Ireland.

Areas of expertise

Advanced Data Structure	Distributed Systems	Code Profiling, Tracing and Bit Hacks
Advanced Algorithmics	Advanced Robotics	
Deep Learning	Heterogeneous High-Performance Computing	Parser and Generator of ANTLR4 Grammars
Machine Learning		
Reinforcement Learning	Low-Power Embedded Systems	
Signals Processing		
Multi-Agents Systems	Real Time Systems	

General skills

LaTeX	GitHub / GitLab / Bitbucket	UNIX / Windows OS

Technical skills

	Computer Science	Computer Engineering	Software Engineering	Audiovisual Production
Programming languages	C, C++, Python, R, Haskell, Matlab	OpenMP, OmpSs-2, PyCOMPSs, OpenACC, OpenBlas, MPI, OpenCL, CUDA, PYNQ, Vivado HLS Xilinx, VHDL, MIPS Assembly, VLIW Assembly, ARM Assembly (RISC), x86 Assembly (CISC), RISC-V Assembly	Java, C#, PHP, Ruby, HTML5, Jade, CSS3, Javascript, Typescript, Sass, JSON, XML, AJAX, Swift, MySQL, PostgreSQL, MongoDB, SQLite, Firebase Realtime Database, Gruntjs, Bower.io, Yeoman.io	-

	Computer Science	Computer Engineering	Software Engineering	Audiovisual Production
Machine and Deep Learning Frameworks	OpenCV, Scikit-learn, Keras, TensorFlow, Torch, PyTorch, Theano, Caffe, DL4J, MXNet, ONNX, OpenNN, CNTK, Spark, Apache	-	CVAT, Label Studio, LabelBox	-
General Frameworks	-	Google Cloud, AWS, Azure, Docker, Kubernete, Vagrant, VMWare, VirtualBox, PCB Design Kicad	Android Studio, Xcode(iOS), Grafana, Prometheus, Nmap, Wireshark, MetaSploit	Adobe Premier Pro, Adobe After Effects, Adobe Photoshop, Inkscape, Adobe Audition, Cinema 4D, 3ds Max, Maya, AutoCAD, Revit, SketchUp, Inventor, SolidWorks
Frontend Frameworks	-	-	Angular, React, React Native, Vue, jQuery, Ionic	-
Backend Frameworks	-	-	Node.js, Express.js, Next.js, Flask, FastAPI, Firebase CRUD	-
Games Engines	OpenGL, WebGL, GLSL, PhysX	-	Qt, Blender, ZBrush, Unity, Unreal Engine, Twinmotion, CryEngine	-