Pedro Llanos Arroyo

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github.com/SirDrope

ACADEMIC BACKGROUND

2014-2019 Computer Science and Architecture at Polytechnic University of Catalonia. Barcelona.

2011-2013 Senior technician in telecommunications and computer systems INS Anna Gironella of Mundet. Barcelona.

2011 High school. IES Princep of Girona. Barcelona

PROFESSIONAL EXPERIENCE

2014 - 2016 UPC Intern (Support) - Mathematics Department
2012 - 2013 Helpdesk T-System. Barcelona (350h)

LANGUAGES

Castellano / Catalan (Native)
English (Intermediate to First)

COMPLEMENTARY EXPERIENCE (Official with Title)

2015-2016 Certificate of completion General English Course. Ireland (Dublin) ChapterHouse Dublin. Level First (60h)

2012-2013 Certificate of completion General English Course. Ireland (Dublin). CCD Central College Dublin. Level Pre-Intermediate (60h)

2011-2012 Cisco Networking Academy (CCNA-1, CCNA-2, CCNA-3, CCNA-4) INS Anna Gironella of Mundet. Barcelona. (280h)

COMPLEMENTARY EXPERIENCE (unofficial with GitHub)

Programming: (Projects about different languages)

C / C ++:

- Advanced Algorithmic: Quick-Sort, Merge-Sort, Radix Sort, Dijkstra, BFS, DFS, Prim/Kruskal, Hash Tables, Similarity Items Algorithm, Greedy Algorithms, Dynamic Programming, Flux Algorithm, Lineal Programming (like a Prolog, with other solvers, Fast Forward, SIMPLEX...), Genetic Algorithm, Hill Climbing Algorithm, Simulated Annealing Algorithm, Probabilistic Algorithm, Monte Carlo Approximation, Las Vegas Approximation, Generate Random Numbers, Approximation Algorithms...
- First prototype of a 3-layer neural network
- Introduction to a new paradigm of functional programming, more mathematical, like a Haskell.
- Algorithm prediction (Sports in the World)
- Algorithm player to BlackJack (All Casino in the World)
- Super Computer (kernel), through syscall in C (Linux), distributed system, Process Pool for Linux Torvalds implementation.
- Game Theory, Nash Balance, Minimax Algorithm, Page Ranking Markov...
- Expert System (SBC)
- Classification algorithms about Data, Linear, SVM, K-NN, CNN...

Java, Swing:

- Mastermind Game, 3-layer model, Presentation (Swing)

HTML5, Jade, CSS3, Sass, JS, Node, Express, AngularJS, Gruntjs, Bower.io, Yeoman.io...:

- Socket.io, Ruby, Ionic, React Native, AWS, Docker:
- Prototype like Instagram, live-stream events (photos ..), chat, ..
- Docker container
- Website hosting and management of an AWS server
- Small multiplatform app prototypes (Ionic, React Native)

Android & iOS (app):

- Chat p2p & p2multipeer like Whatssap - Hackathon (Android)
- Fly App (Android)
- Game app like Flappy Bird (iOS) (Swift)
- Game app like Heavy Glory (Plane Platforms) (iOS) (Swift)
- App, List of controls that Mobile games can have (iOS) (Swift)

Github / GitLab / Bitbucket: (Version control, group work)

Python, Flask:

- Web page, authentication control, using Bezier curve in WebGL

Machining learning (TensorFlow):

- Prototype, how to win in arcade games like Ping Pong and Super Mario Game

PostgreSQL, MySQL, SQLite (Relational), MongoDB (non-relational):

- Application data management

- Layer of Persistence in quite a few of the projects carried out

Unity (Game):
- Game for all Platforms (prototype like a Super Mario (2D) Sprite)
- Game for all Platforms (prototype like a Cross Road (3D)) - Game Jam

WebGL, OpenGL, Cal3D, PhysX, OpenCV:
- WebGL game, controlled by Leap Motion - Hackathon
- Video Game Engine: (Objects, Polygons)
- OpenGL (Graphics)
- Cal3D (Animation)
- PhysX (Physics of the game, force, gravity, acceleration, weight ...)
- Qt (interface)
- OpenCV: Extract and analyse information of interest contained in an image or sequence of images, to recognise objects, faces, numbers...

Architecture:

Arduino, Raspberry-Pi, ODROID, Microchip PIC-18F4550 (Mips-Risk), servomotors, Intel-i80386 (x86-Cisco):
- Programming of different hardware, to control devices, how they work internally, to have control of the system, and to be able to make some embedded system or complex system.

Start to implement the little microchip 32 bits(monocore)

Cuda, OpenACC, OpenCL, OpenMP, MPI:
- Project with OpenACC, parallelization CPU's & GPU's
- Project with Cuda, parallelize GPU's (Nvidia)
- Project with OpenCL, parallelize GPU's (all graphics card)
- Project with OpenMP, parallelize CPU's
- Project with MPI, parallelization with distributed memory's & caches (a Cluster with ODROID's to testing)

Analogue Signal Processing:
- Fast Fourier Transform, by means of a Microchip
- Reed-Solomon Codes, Error Correction (Raid System)

Systems:

Cybersecurity & Networks:

- Metasploit: Hack to Mobile platform (Android & iOS), MacOS, Linux & Windows System (Exploit to PDF, Firefox, Word ...)
- Nmap: Scanning the network (subnetting)
- Wireshark: Capturing network packets subnetting
- Management Windows Input and / or Output (Bytes)

Linux / Windows Administration: (Virtual Environment)

VMWare, VirtualBox, VMware ESXi (virtualization environments)

Development of a system:

- ZEOS System:
  - ✔ Drivers Kernel
  - ✔ BootLoader
  - ✔ Algorithm Scheduler
  - ✔ Quantum control
  - ✔ SysCall Management
  - ✔ Interruptions, Exceptions
  - ✔ Fork(), Write(), Read(), Execlp()...
  - ✔ Sockets and Pipes
  - ✔ File System
  - ✔ Change user mode to Privilegiad0 (trap), ring0
  - ✔ Traffic lights, Locks