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Juan Casado Ballesteros

Juan Casado Ballesteros, September 6, 1998.

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Employment

Full stack robot developer	Complubot	Spring 2017 - Present

Pollotron-Project (Under development)   Fall 2018 - Present
- C++ Linux/ROS-based robot that that performs SLAM to navigate through the environment.
- Image recognition with Intel Real Sense and OpenCV and voice recognition with Google cloud text-to-speech.
- Multi-platform desktop C++ app to monitor and control the robot's omnidirectional velocity-encoded motor platform.

MegaTrueTrue   Summer 2017 – Fall 2018
- C++ modular robot Arduino-based that imitates the behavior of TrueTrue robot while being eight times bigger.
- Multi-platform mobile and desktop C++ app to remotely control the robot over TCP.
    - This robot debuted at the SIMO robotics fair in November 2018 at Madrid.

Software engineer	Complubot	Fall 2015 – Summer 2017

ColdPlay-Robot   Fall 2016 – Summer 2017
- C++ Arduino-based robot that uses a Pixy camera to perform artificial vision over real time video.
- The robot detects objects by color and takes them with a grab to carry them to the color matching compartment.

Alien Soccer   Fall 2015 – Fall 2016
- C++ Arduino-based distributed pair of robots communicated via Bluetooth to play robot soccer.
- Each robot had a modular architecture with dedicated software and hardware to control each sensor including a compass and a 360 infrared vision system and each encoded motor.
    - This robot was the third out of eight in at Imperdibles2.0, a European robot soccer competition.

Investigation

Optimization of antenna placement using genetic algorithms	February 2019 - Present

- Web application that implements a set of genetic algorithms to determine the best placement of antennas to reduce signal loss which is calculated using different heuristic techniques.

Education

Alcalá de Henares, Madrid	University of Alcalá de Henares	September 2016 - Present

- Computer Science degree. 158/240 credits completed (100% completion), with a GPA of 3.1/4 (7.75/10).
- Coursework: Statistics, Linear Algebra, Calculus, Logic, Algorithmic, Data Structures, Operative Systems, Data Bases, Memory Shared Concurrent programming, Robotics, Functional Programming, Software Engineering, Physics, Distributed Programming, Network Management, Artificial Intelligence, Compilers, Object Oriented Programming, Functional Programming, Logical Programming, Cloud Computing, GPU Programming.

Alcalá de Henares, Madrid	British Council	September 2017

- TOEFL 110-114 Cambridge CAE C1.2 level English classes.

Technical experience

- Multi-threaded memory shared simulation of a fuel station done in JAVA. It could be remotely monitored through TCP connection over another JAVA application.
- Color Queue: iOS and Android app in C++, one user creates a TCP server to allow others to connect and play together.
- JAVA program that translates JSON to .dot files and them to .svg using a Parser and a Lexer built with antlr4.
- Imitation of the 2048 game using CUDA with the aim of an efficient execution over a GPU.
- Imitation of the 2048 game using SCALA with the aim of learning functional programming paradigm.
- Creation and maintenance of a relational SQL data base as a university project.
- Game of life: iOS and Android app done with cocos2d-x game engine that simulates Conway's Game of Life.
- Set of common algorithms implemented in Swift (greedy/simple recursion/backtracking/dynamic).
- Shutter Earth: 2d platform shooter in JAVA over slik2d game engine.
- Linux shell that used POSIX calls to the OS and implemented a custom pipe and redirection system.

Programming Languages and Technologies

- C++, C, JAVA, Python, JavaScript, CUDA, Swift, R, Scala, Lisp, Prolog, SQL, HTML5, CSS3, XML, JSON, Markdown, LaTeX.
- ROS, MATLAB, cocos2d-x, pygame, slick2d, Swing, antlr4, OpenCV TensorFlow, grapviz.
- PostgreSQL, MySQL, MongoDB, WireShark, Linux, Git, GitHub, JIRA, Project, WordPress.
- NetBeans, XCode, CLion, PyCharm, Sublime Text, Visual Code, Atom, Code Blocks, Android Studio, KiCad.