João Pedro Alvito

systems, control and robotics engineer

contact

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personal

31/08/1990
male
Portuguese
sintra, lisbon

languages

portuguese mother tongue
english c1/c2
swedish b1
spanish a2
french a1
italian a1

programming

Fluent:
Python
C/C++
Matlab
LabVIEW
Latex
Unix/bash

Knowledge:
Java
HTML/XML
Assembly

working experience

2015–Now Semcon — Stockholm, Sweden

Embedded Developer Engineer

2013–2015 KTH, Royal Institute of Technology — Stockholm, Sweden

Research Engineer

In the Smart Mobility Lab researchers and students develop and test intelligent transportation solutions in simulated traffic situations with remotely controlled model cars. By connecting vehicles with each other and the surrounding traffic system, this research aims to make transportation more energy efficient and secure. This means for example that trucks can save fuel by decreasing air resistance through platooning, or use GPS data to enable goods transportation to take the shortest route to the destination.
Main tasks:

- Management of several projects in the Smart Mobility Lab.
- Supervisor of KTH student's projects in the Smart Mobility Lab.
- Development (mainly C, python, Matlab and LabVIEW projects).
- Collaboration in iQMatic project.
- Developement of a test bed for implementation of scenarios with autonomous vehicles.
- Test bed contains several snippets of code developed in mostly in Matlab and LabVIEW with some components in python.
- Some acquired experience in documentation and version control to organize and keep up to date the material available in our lab.

Contacts for references:

- Jonas Mårtensson [jonas1@kth.se]
- Karl Henrik Johansson [kallej@kth.se]

2013 NI, National Instruments — Stockholm, Sweden

Labview certification

During this period I completed the LabVIEW core 1 & 2 and successfully attend the LabVIEW certified associate developer exam. According to NI, this certification indicates a broad working knowledge of the LabVIEW environment, a basic understanding of coding and documentation best practices, and the ability to understand and interpret existing code.
Contacts for references: Payman Tehrani [payman.tehrani@ni.com]

2011 NWC, Network Concept Lisbon, Portugal

Summer Intern

I did this short-term internship in the company NWC located in Lisbon. The company develops products for home automation, more precisely integrates all the components into a system that transforms a regular house into a ”smart” house. During my time in the company my main tasks were product testing and market research. I was able to give feedback on the current products and do some modifications myself. Overall it was a great experience in a very exciting field of robotics.

Contact for references: André Serpa [andre.serpa@nwc.pt]

education

2013 Master Thesis in systems, control and robotics KTH, Stockholm, Sweden

This was the last step before finishing my studies. I did my master thesis in the Smart Mobility Lab (SML, is a laboratory that is affiliated to the automatic control department from KTH). The main knowledge areas of the thesis are autonomous vehicles and vehicle platoonig. The thesis integrates various smaller components from robotics and control’s fields of study.
”Implementation of Traffic Control With Heavy Duty Vehicle Anti-Platooning”
http://www.diva-portal.org/smash/get/diva2:662328/FULLTEXT01.pdf

2012 Double degree in systems, control and robotics KTH, Stockholm, Sweden

In this last year of the master studies I attended the KTH university (royal institute of technology). In the first term I completed the courses that relate the closest to my major. This was a major opportunity to improve myself in an unknown environment and adapt to a different learning method. Simultaneously I completed two levels of swedish (A1/A2).

- Non Linear Control
- Robotics and Autonomous Systems
- Machine Learning
- Theory and methodology of science

2011-2012 Double degree in systems, control and robotics IST, Lisbon, Portugal

In the begining of my master program I was accepted in a international program that awards a double degree, provided by an agreement between the two universities (KTH and IST). I was one of two students in this program, were we must divide our studies between the two universities. I opted for doing my first year in IST (portugal), mostly because I wanted to proceed my career internationally. This program has as major study areas: systems, control and robotics. In this first year I attended the following major courses:

- Image Processing and Vision
- Optimization and Algorithms
- Robotics
- Artificial Intelligence
- Communication Theory
- Computer Controlled Systems and Identification

2008-2011 MSc in Electrical and Computer Engineering — IST, Lisbon, Portugal

In 2008, I was accept in the Electrical and Computer Engineering program at the renowned portuguese engineering school, IST (Instituto Superior Técnico).
The program consists in an integration between the bachelor and masters, where in the first 3 years one completes the bachelor and the 2 remaining years are dedicated to the masters. At this stage, the bachelor, I adquired the basic knowledge that an engineer must have to be able to solve any proposed problem.
One of the reasons that led me to choose this program, was precisely the broad learning spectrum at the bachelor level, where I attended introductory courses in different areas:

- Electronics
- Control
- Energy
- Computers
- Telecomunications

With the relavant courses:

- Control
- Modeling and Simulation
- Signals and Systems
- Electronics
- Systems Programming
- Computer Networks
- Digital Systems
- Artificial Intelligence
- Management

2004–2008 High School Education — Colégio D.Afonso V, Lisbon, Portugal

I attended the scientific high school in Portugal where I adquired a broad knowledge in different branches of science. Some of the major courses were the following: Mathematics, English, Chemistry, Physics, Psychology.
I finished my studies with an everage of 18 out of 20 or the grade A in the scale A-F.

1998–2004 Basic Education — Colégio D.Afonso V, Lisbon, Portugal

computer skills

As it is natural for an engineer I consider myself computer savvy. With time I adquired experience in diferent programming languages.

Fluent

- Python
- C/C++
- Matlab
- LabVIEW
- Unix/Bash

Some knowledge

- Java
- Javascript
- CSS
- JQuery
- HTML/XML
- Assembly

Other than programming languages, I'm also experienced in different softwares like Microsoft Office. For reports and general text files I prefer to use Latex tools, because I feel it is much more customizable.

As an hobby I also often solve problems in the project euler iniciative. Currently I am at the 100+ problems solved level.