

Alvaro Carballo Garcia

Senior programmer/Mechanical engineer | Ponferrada (Spain) – (+34)665775834 – contact@customsolvers.com

Summary

Programmer with over 9 years of software development experience and a good background in physics, mathematics and mechanical engineering; excellent learner, very adaptable, with solid principles and humour enjoyer.

Specialities:

- From-scratch development of efficient algorithms accounting for data-intensive situations.
- Improvement of existing pieces of software.

Experience

Self-employed

October 2015 - Present

Custom Solvers 2.0 – Ponferrada, Spain (remote work) – Custom software development

- [After a personal realisation](#), I decided to restart my self-employed activity [under notably different conditions](#).
- My two sites (customsolvers.com and varocarbas.com), which I developed from scratch by mostly relying on PHP, provide a good idea about this new stage.
- My first relevant open-source project: [FlexibleParser](#), a comprehensive (C#; .NET 4.0) parsing library formed by independent parts (at the moment, [UnitParser](#) and [NumberParser](#)). Its code is stored in [the FlexibleParser repository of my GitHub account](#) and analysed in the corresponding varocarbas.com sections (i.e., [UnitParser](#) and [NumberParser](#)).

Self-employed

October 2008 - October 2013

trendingIT/Custom Solvers – Ponferrada, Spain (remote work) – Custom software development

- Development of a wide variety of custom software applications.
- Improvements in different aspects of existing pieces of software.
- Data/numerical modelling and mathematical analysis under a wide variety of different conditions.
- Additional tasks associated with managing, promoting and funding a small business without relevant resources.
- Online references: [trendingIT in customsolvers.com](#) and [Custom Solvers 1.0 in customsolvers.com](#).

Simulation engineer

July 2006 - July 2008

Reaction Engineering Solutions (now: CMCL Innovations) – Cambridge, UK – IC-engine modelling

- Awarded with an EU grant (“Becas Argo”) to work as a trainee simulation engineer (6 months).
- Close collaboration with the University of Cambridge (CoMo Group, headed by Dr. Markus Kraft).
- Typical tasks of an IC-engine simulation engineer.

Education

BEng in Mechanical Engineering

October 2002 - July 2005

University of Oviedo – Spain

- Subjects of interest: thermodynamics, structural mechanics, mechanical design.
- Ranked within the top 2% in a class of 300.
- My actually relevant university degree, where I found my true calling (i.e., engineering and programming).

MS in Law

October 1996 - June 2002

University of Oviedo – Spain

- Exchange student at the Westfälische Wilhelms-Universität, Münster, Germany (1999-2000).
- Almost anecdotal degree. I never liked law and my professional career has been fully focused on engineering and programming.

MEng (4th & 5th) in Industrial Engineering (Energy)

October 2005 - June 2007

UNED – Spain – Incomplete

- Subjects of interest: nuclear engineering, IC engines and turbines.
- Not completed because of non-academic reasons (i.e., too expensive and time-consuming “hobby”).

Skills & Expertise

Programming languages & databases

- C# & VB.NET (all .NET versions), Winforms, Console, Library, WPF, ASP, Silverlight – VBA – VB6
- PHP – C – Java – SQL Server – MySQL
- Fortran (77, 90) – Various C-based languages (C++, Perl) – JavaScript – PostgreSQL – Python

Software

- MS Windows (all versions) – MS Office – Adobe Utilities
- Visual Studio (all versions since 2008)
- Linux – Apache – XAMPP – Cygwin – NetBeans – Eclipse – Azure – AutoCAD
- Mathematica – MATLAB – LaTeX – Compaq Visual Fortran

Miscellaneous

- Custom software development and from-scratch algorithm building.
- Corrections and performance improvements in existing pieces of software.
- Numerical modelling and data analysis for a wide variety of scenarios.

Languages

Spanish (mother tongue) – **English** (fluent) – **German** (basic)

Online References

<https://customsolvers.com/> (main website) – <https://varocarbas.com/> (R&D projects eminently focused on programming)