DAVID VILELA

I'm an Engineering PhD with almost ten years of experience in research and software development. Despite I started my carrer from a purely scientific and academic perspective, after my PhD I decided to shift my focus towards more applied fields, since I felt I was more interested in the practical application parts of problem-solving.

I consider myself an IT enthusiast, and love understanding and automating things. I am particularly interested in new technologies, especially Machine Learning, Distributed Ledger Technologies and Security. I'm a fan of the aerospatial industry, Physics and Mathematics, open source code, music, design, LEGO blocks and I'm fascinated by the human brain and how things work.

I have always worked on small and medium-sized teams where every member must take ownership on their projects and be able to work without close supervision. Currently I work for an automotive research center where I'm implementing a sensor managing and recording platform to generate training data for machine learning algorithms. Recently I've started taking a DevOps role, learning about Docker, Kubernetes, Jenkins and the CI/CD cycle, as well as server managing.

Previously I've worked on the development of efficient, real-time collision detection algorithms, multibody simulators applied to virtual assembly and vehicle, machinery and mechanism simulations for hardware-in-the-loop platforms. I have also designed and developed haptic interface hardware and its corresponding control software.

Teaching at the university for four years and writing scientific papers helped me to improve my communication skills, and since I've always loved explaining things to others as well as divulgation, I keep trying to make my tiny contribution through my Youtube channel, telling stories about science, technology and development.

CONTACT & MORE

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dvilela.info

linkedin.com/in/dvilela

github.com/derkomai

youtube.com/c/DavidVilela0

EXPERIENCE

2020 - Present
Machine Learning Platform Engineer
CTAG, Automobile Technological Center of Galicia
Developing a sensor recording, managing, syncing and decoding platform to generate training data for autonomous vehicle machine learning algorithms. Learning DevOps.

2019 - 2020
Research Support Technician
Mechanical Engineering Laboratory, University of A Coruña
Researched and validated a volumetric force model based on sphere discretizations from the Computer Graphics Group. Wrote two research papers based on my dissertation's results and those validations.

2014 - 2018
Predoctoral Researcher & PhD Teaching Assistant
Mechanical Engineering Laboratoryy, University of A Coruña
Researched and implementated a multibody real time simulator capable of handling conforming contacts using a precise collision detection algorithm and a volumetric force model. Developed a VR haptic feedback glove device, from electronics design to control software. Teached Solid Works and CAD. Colaborated with the Computer Graphics Group in the University of Bremen during an insternational stay.

2012 - 2014
Research Assistant
Mechanical Engineering Laboratory, University of A Coruña
Developed a real-time multibody vehicle simulator for hardware-in-the-loop platforms to assess vehicle dynamics behaviour. Developed a multibody algorithm benchmarking and ranking website oriented towards international scientific collaboration.

EDUCATION

2014 - 2018
PhD in Industrial and Naval Engineering
University of A Coruña

2012 - 2013
Industrial and Naval Technologies Research M. Eng
University of A Coruña

2003 - 2011
Industrial Engineering B. Eng + M. Eng
University of A Coruña

COURSES, CERTIFICATES AND ACTIVITIES

2021
- DevOps with Docker, Jenkins, Kubernetes, Git and CI/CD, Coursera
- Hands-On Test Driven Development with Python, Coursera
- Jenkins, From Zero To Expert: Become A Jenkins Master, Coursera
- SOLID and Clean Code principles. Write quality code, Coursera

2014
- C1 Certificate in Advanced English, *Cambridge School*

2011
- Introduction to Artificial Intelligence, *Stanford University Online*
- Introduction to Machine Learning, *Stanford University Online*
- Child Education and Support Volunteering, *Nepal Sonríe NGO*

2003
- Coastal Skipper, *Nautical and Fishing School of Ferrol*

TECHNOLOGIES

My current main technologies are **C++** and **Python**, and I regularly work with **Bash**, **Flask**, **HTML/CSS** and **JavaScript**, In the past I've used **Fortran**, **Matlab/Octave** and **Django**. I've been developing mostly under **GNU/Linux**, where I am the most comfortable, but I spent my two first research years in **Windows** and I have also developed under **Mac OS** for a few months.

I usually fiddle with **Raspberry Pis**, and from time to time also with **Arduinos**, **ESP32** and **ESP8266**. I've also developed some small home projects using **Python**, **Bash**, **JavaScript/Node**, **Django**, **REST**, **Websockets**, **SQLite**, **HTML/CSS** and **Qt** among others. I'm familiar with web development, graphic design, 3D modeling, scientific writing and audio/video edition.