

Josep Fargas | Curriculum Vitae

Contact information

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Education

Polytechnic University of Catalonia

Bachelor's degree in Industrial Technology Engineering

GPA 7.7 over 10

Barcelona, Spain

2011–2016

Polytechnic University of Catalonia

Bachelor's degree in Engineering Physics

GPA 7.8 over 10

Barcelona, Spain

2012–2016

I did a double major program for academically high-quality multidisciplinary students in scientific and technological fields. Only 40 students every year can do it in Spain. Currently I am working on my final thesis at CU Boulder, USA.

Work and research experience

CU Boulder, ECEE department

Research assistant internship

Boulder, CO, USA

August 2015–Present

I was awarded the Balsells's fellowship from Spain to do my Bachelor's thesis at CU Boulder. Since the first of August I have been doing full time research in Prof. Milos Popovic's group at CU Boulder. I am working in the field of silicon photonics. I have been designing a new nanoscale 3dB beam splitter. Once I have done that I will explore the scalability of those elements to do quantum computation on a chip.

The Institute of Photonic Sciences, ICFO

Summer fellowship

Barcelona, Spain

July 2014–April 2015

I got a fellowship during the summer 2014 and I continued during the fall working with Prof. Morgan W. Mitchell's QICANL (*Quantum information with cold atoms and non-classical light*) group. I worked on a strategy to compensate the background magnetic field for a Bose Einstein Condensate experiment.

Carburos Metàlics, Air Products

Industrial Engineer internship

Barcelona, Spain

summer 2013

During summer 2013 I took active part in a small engineering project. I studied the viability of a new more dense packaged product and the methodology of its fabrication. My studies helped to reduce costs and had an impact on the company.

Institut de Robòtica i Informàtica Industrial, IRI

Research assistant internship

Barcelona, Spain

summer 2013

During summer 2013 I work with a Stäubli's robot arm. I implemented the connection with a high level Robot Operating System environment (ROS).

Skills

I am passionate for work. I always need to take action and do some work. Because of my double major studies I have a really good interdisciplinary background in engineering, math and physics knowledge. Firstly, I have both the theoretical and high tech view of physical engineering. Secondly, I have a wide knowledge of engineering; mechanics, heat transfer, electrodynamics, signal theory, control theory and electronics. I also have a good communication skills and have worked a lot on self-expression during my days in university. I love taking active part in a teamwork, I have had teamwork experiences every summer since 2013 and realized that considering views of others and sharing knowledge is crucial for carrying out complex projects.

Computer skills

Programming: PYTHON, FORTRAN, ROS, C, MATLAB, NAMD

Engineering: LABVIEW, MINITAB, ANSYS

Awards

Award with Balsells mobility program fellowship

scientific advisor: Prof. Dr. Milos Popovic

Boulder, CO, USA

Aug 2015-Gen 2016

Award with ICFO – Caixa Catalunya Summer Fellowship Programme 2014

scientific advisor: Prof. Dr. Morgan W. Mitchell

Barcelona, Spain

Jul 2014-Sep 2014

Polytechnic University of Catalonia

*Award for being in the top ten GPA students in the first year
8.9 over 10*

Barcelona, Spain

November 2012

UPC's Interdisciplinary Higher Education Center

Starting a double major program

Barcelona, Spain

September 2012

CNM,CSIC

Award for the project "Building an analogical robotic arm with six degrees of freedom"

Barcelona, Spain

May 2010

Projects

- **Nanophotonic 3dB coupler:** Working on different designs for silicon photonics beam splitters.
- **Polarizer on fiber using graphene:** Setting up an experiment where I deposited graphene on an optical fiber and I characterized its non-linear absorption characteristics. Demonstrated a polarizer using graphene on an optical fiber.
- **Active magnetic field control for a Bose Condensate:** Worked on a strategy to compensate the background magnetic field for a Bose Einstein Condensate experiment at ICFO.
- **Quadcopter:** Designing minimum jerk trajectories generator and a controller of such trajectories for a Parrot AR.Drone 2.0 at UPC.
- **ROS-Stäubli connectivity:** Making URDF Stäubli arm model and its scripts connectivity using ROS and C++.
I did it in Institute of Robotics and Informatics from CSIC.
- **Gas package process:** Studying the process of mixing package gas and the viability of a higher mass package process. I did it in Carbueros Metálicos.
- **Delta-Arm Robot:** Designing, building and controlling a parallel robot in series with a robotic arm.
- **Design a brake lever:** Designing and building a brake lever shape with numeric simulation in ANSYS software for the subject continuum medium mechanics.
- **Distance control for laser positioning:** Physical engineering project which join a first part of decoding an IR signal analogically, and then, using Arduino to move two motors to orientate a laser in the space.
- **Diffusion simulation:** Python simulation in which some particles move randomly into space with sphere uniform distribution as a material model for the subject statistical mechanics.
- **Analogical controlled robotic arm:** Design the electronic device that control a servomotor position and use it to control a robotic arm built with wood. It was my high school thesis.

Languages

Catalan

Native

Spanish

Native

English

TOEFL iBT 95, Fluent

Interests

- MARTIAL ARTS:

- Judo, Karate-do and Jiu-jitsu.

- DANCE:

- Latin dances: Bachata and Salsa.

- MUSIC:

- Playing piano.