



## **BRUNO FILIPE FERREIRA BRITO**

**E-mail:** [brunoffbrito0@gmail.com](mailto:brunoffbrito0@gmail.com)

**Phone number:** +49 176 577 041 169

**Birth Date:** 17.09.1990

**Nationality:** Portuguese

**Address:** Lindenspüstr. 19, 70176 – Stuttgart, Germany

### **Professional Experience**

---

SINCE MARCH 2016

**Marie Skłodowska-Curie Research Fellow at Fraunhofer-Institut für Produktionstechnik und Automatisierung (Fraunhofer-IPA) – Department of Robot and Assistive Systems ([www.ipa.fraunhofer.de](http://www.ipa.fraunhofer.de))**

Main responsibilities: Research on mobile manipulation for safe human-robot interaction focused in two main areas: motion planning and control. Development of real-time motion planners to generate collision-free trajectories, avoiding all static, dynamic and unknown obstacles in human environments based on Dynamical Systems approach. The design of whole-body controllers based on Passive control and using the port-Hamiltonian approach to ensure a safe interaction with the environment during manipulation tasks.

APRIL 2014 – FEBRUARY 2016

**GNC Systems Engineer at European Space Agency (ESA) – Department of Guidance Navigation and Control ([www.esa.int](http://www.esa.int))**

Main responsibilities: To support and manage ESA activities with industry. To design Guidance, Navigation and Control systems for space missions. To research on the control techniques and path planning applied autonomous space robot systems. The development of Software-in-the-loop (SIL) and Processor-in-the-loop (PIL) simulations in order to verify and validate the GNC design. Systems such as dSpace and RASTA are used in PIL simulations. To work in development of the ESA robotics laboratory test facility (Hardware-in-the-loop simulations). Programming and testing different sensors such as: vision based, 3D and infrared cameras. Simulation and real-time control of industrial robots (Kuka and Comau).

OCTOBER 2013 – APRIL 2014

**Electronics Engineer –EFACEC Electronic Systems – Aerospace Department ([www.efacec.pt](http://www.efacec.pt))**

Main responsibilities: Simulating, designing and testing of electronic circuits. Programming FPGA and microprocessors (LEON-3) architectures designed for Radiation-hard environment.

NOVEMBER 2012 – OCTOBER 2013

**Automation Engineer –Engineering Department of Continental Mabor ([www.continental.pt](http://www.continental.pt))**

Main responsibilities: Software development to automate and optimize the production lines systems. To plan, install and test electrical and electronic circuits for specific applications in the industry.

OCTOBER 2009 – AUGUST 2011

**Assistant Professor – Faculty of Engineering of Porto**

Main responsibilities: Giving support to practical lessons of: Mathematical Analysis, Algebra, Programming and Control Theory.

---

## Honors and awards

---

NOVEMBER 2014

### **ABB Award- University of Porto and ABB**

The prize is awarded annually to a graduate of the MSc in Electrical Engineering and Computer that get the best Master's Thesis, developed on one of the following themes: Renewable energy , Industrial automation and robotics.

### **ProjectYOURFuture Award - University of Porto and Continental Mabor**

The Prize ContiMaster promoted by the company Continental SA is awarded by the student conducting the best and with more applicability in the reality of the company dissertation.

SEPTEMBER 2012

### **ContiStudentAward- University of Porto and Continental Mabor**

The Prize ContiMaster promoted by the company Continental SA is awarded by the student with highest average in engineering fields of student between courses of Electrical Engineering, Computer Science, Industrial Engineering and Management and Mechanical Engineering.

MARCH 2011

### **Merit Scholarship - University of Porto**

It was received in the academic year 2009/2010 due to exceptional academic performance.

MARCH 2010

### **Incentive Award - University of Porto**

The Incentive Award, given annually to students in the first year at the University of Porto, who has obtained the best average grade in the engineering field.

---

## Academic Background

---

### **European Space Agency**

**NETHERLANDS**

OCTOBER 2014

### **VISION BASED NAVIGATION AND SYSTEM IDENTIFICATION COURSES**

Main Topics: Vision based navigation. Image Processing. Navigation algorithms. System Identification.

### **Faculdade de Engenharia da Universidade do Porto**

**PORTUGAL**

SEPTEMBER 2008 – OCTOBER 2013

### **MSc in ELECTRICAL AND COMPUTERS ENGINEERING – Final GPA of 18/20**

Main Topics: Vision Systems, Control Theory, Digital Systems, Identification and Estimation, Automation systems, Robotics and Autonomous Systems, Microprocessor Based Systems, Power Electronics and Motor Control.

### **Eindhoven University of Technology**

**NETHERLANDS**

AUGUST 2011 – MARCH 2012

### **ERASMUS EXCHANGE PROGRAM – MSc SYSTEMS AND CONTROL**

Courses: Advanced Digital Circuit Design, Complex Analysis, Dynamical Systems, Robotics, Motion Control, Robust Control, State Space Control and Statistical Signal Processing.

---

## Conferences & Workshops

---

**"Development of the ESA Robotic Test Facility for the Real-Time Verification & Validation of GNC Prototypes"** in collaboration with Guillermo Ortega Head of GNC section on the EuroGNC 2015.

***"Robot Trajectory Optimisation for On-orbit Servicing and Uncooperative Rendezvous" on the 3<sup>rd</sup> European Optimisation in Space Engineering (OSE) Workshop***