

Alejandro BLUMENTALS, Ph.D.

56 Rue de Stalingrad
38100 Grenoble, France

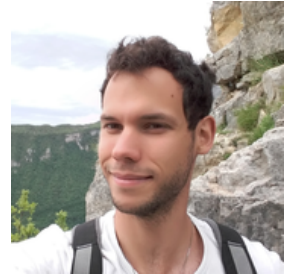
☎ +33 (0)6 42 90 35 52

✉ alejandrobumentals@gmail.com

in [Alejandro Blumentals](#)

Born 17/09/1990

French-Venezuelan citizen



R&D Engineer in Artificial Intelligence and Robotics

Ph.D. in Mathematics and Computer Science, AI enthusiast, competent in Machine Learning, Robotics, Computer Vision, Software Development and Optimization. Fluent in English, French and Spanish, intermediate German.

PROFESSIONAL EXPERIENCE

- Sep 2017-Dec 2017 • **Autonomous Driving Engineer at INRIA (Grenoble, France):** In the context of a collaboration between INRIA, Easymile and IVECO, my role was to design a **safe-by-construction trajectory generation** module for a 12m long autonomous bus with a capacity of 110 people and a cruising speed of 40km/h. The safety and comfort of the generated trajectories were the main focus of my work. The design of the module relies on a Model Predictive Control (MPC) scheme which incorporates core ideas from the robotics literature. I implemented a prototype of the module in Python, using Casadi for automatic differentiation and the nonlinear optimization solver Ipopt.
- Oct 2013-Jul 2017 • **Ph.D. student, researcher at INRIA and LJK (Grenoble, France):** My doctoral research topic was the computational mechanics of thin elastic solids in contact. I developed novel computational methods for the equilibrium of geometrically exact rods in contact and employed tools from Numerical Optimal Control to solve problems in computational elasticity.
- Oct 2014-Jul 2016 • **Teaching Assistant at Grenoble-INP Ensimag:** Taught Bachelor's and Master's level courses to groups of 40 students in Convex Optimization, Numerical Methods, Calculus and Geometric Modeling.
- Jul 2012-Sep 2012 • **R&D Internship in Computer Vision at Skerou (Paris, France):** Developed several tools for the image processing pipeline of an Iphone/Android app handling receipt images. Surveyed and implemented state of the art techniques for blur detection and skewness correction. Made extensive use of C++, Python and OpenCV. Used Scrum development framework and GitFlow.

EDUCATION

- 2013-2017 • Ph.D. in Mathematics and Computer Science at Université Grenoble Alpes, INRIA Grenoble and Laboratoire Jean Kuntzmann.
- 2010-2013 • MSc in Applied Mathematics and Computer science at Grenoble INP-Ensimag. Majored in Computer Vision and Robotics.
- 2008-2010 • Intensive scientific preparatory classes for french engineering school entrance competition, Lycée Pierre de Fermat, Toulouse.
- 2008 • Baccalaureate in Science (major in Mathematics), Lycée Français de Caracas, Venezuela.

TECHNICAL SKILLS

- Mathematics • Optimization, Machine/Deep/Reinforcement Learning, Statistics, Control Theory.
- Programming Languages • Mainly Python and C++. Previous experience in Matlab, C, ADA, Java, Bash.
- Tools • Numpy, Scipy, Keras, Tensorflow, Chainer, Pandas, Jupyter, OpenCV, Git, LaTeX, Linux.

MISCELLANEOUS

- Hobbies: technical • Continuous learning online: currently focusing on Deep Reinforcement Learning courses from DeepMind and Berkeley.
- Hobbies: non technical • Outdoor rock climbing, bouldering, drawing and watercolor painting.