

# Isabelle Santos, PhD.

## *Astrophysics and applied mathematics*

American citizen

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**Profile:** I have strong knowledge and skills in applied mathematics and machine learning, work well on a team and just can't stop getting things done.

**Goals:** Put my experience in applied mathematics to work in astrophysics

## Education

- 2016-2019* PhD in applied mathematics on numerical methods for solving stochastic differential equations at the University of Toulouse, France
- 2018-2019* Master of Science in Astrophysics, Space Science and Planetology at the University of Toulouse
- 2014-2015* Master of Computer Science with a specialisation in machine learning at the Illinois Institute of Technology
- 2011-2014* Master of Engineering in Computer Science in Toulouse
- 2008-2011* Maths and physics in preparation for competitive exams to French engineering schools
- 2008* Baccalaureate cum laude

## Work Experience

- 2019* Master thesis studying filamentary structures that appear in Faraday tomography of the interstellar medium.
- 2016-2018* Measure theory and probability professor for third year engineering students.
- 2015* Master thesis assessing machine learning techniques for anomaly-based intrusion detection systems for embedded avionics at Rockwell-Collins in Toulouse, France.
- 2014-2015* Intern consultant overseeing aerospace activities at *New Generation Power* in Chicago.
- 2012-2014* Translating technical manuals from French to English for airlines

## List of Publications

Isabelle Santos. *Fonctions de navigation harmoniques stochastiques: application à la planification robuste de trajectoires avion*. PhD thesis, Université Toulouse 3 - Paul Sabatier, 2019.

Isabelle Santos, Stéphane Puechmorel, and Guillaume Dufour. First order hadamard variation of the harmonic navigation function on a sphere world. *Mathematical and Computational Applications*, 23, 2018.

## Transversal Skills

<i>Languages</i>	Mother tongue: French and English Conversational German and Spanish ; Basic Chinese
<i>Computers</i>	Python; C; Fortran; L <sup>A</sup> T <sub>E</sub> X; OpenMP

## Interests and extra-curricular activities

- Astronomy instructor and scientific mediator
- Music: piano and violin at the Conservatory in Paris; euphonium in the VanderCook symphonic band
- Sports: karate, swimming and biking
- Member of the debate team