

# MARTA DÁVILA MATEU

 [davilama@usc.com](mailto:davilama@usc.com)

 [martadavma.com](http://martadavma.com)

## Research Interests

My research interests are in Programming Languages and Formal Methods. More specifically, I am interested in program synthesis, automated theorem proving, and automated verification.

## Education

### University of Southern California

*Ph. D. in Computer Science*

Advisor: [Dr. Mukund Raghethaman](#).

**Los Angeles, CA, USA**

*August, 2024-Now*

### University of Southern California

*M. Sc. in Computer Science*

Programming Languages Research.

Research Advisor: [Dr. Mukund Raghethaman](#).

**Los Angeles, CA, USA**

*August, 2022-December, 2023*

### Maastricht University

*B.Sc. in Data Science and Engineering - Honours Degree*

**Maastricht, the Netherlands**

*August, 2016-June, 2019*

Research-Based Learning for Excellence (30 additional credits).

Research Advisors: [Dr. Kateřina Staňková](#) and [Prof. Frank Thuijsman](#).

### University of Sydney

*B.Sc. in Computer Science*

**Sydney, Australia**

*August, 2018-December, 2018*

Exchange Semester.

## Teaching Experience

### CSCI 170 - Discrete Methods in Computer Science.

*Head Teacher Assistant*

Lecturer: [Mate Szabo](#).

**University of Southern California**

*Spring 2026*

### CSCI 270 - Algorithms and Theory of Computing.

*Head Teacher Assistant*

**University of Southern California**

*Fall 2025*

Lecturer: [Mate Szabo](#).

### CSCI 570 - Analysis of Algorithms.

*Head Teacher Assistant*

**University of Southern California**

*Spring 2025*

Lecturer: [Shahriar Shamsian](#).

### CSCI 103 - Introduction to Programming.

*Teacher Assistant*

**University of Southern California**

*Fall 2024*

Lecturer: [Andrew Goodney](#).

## Working Experience

### ESA Guiana Space Centre

*Technical Manager - Software and Systems Engineer*

**Kourou, French Guiana**

*February, 2021 - May, 2022*

Developing and improving vital software for rocket's flight and safety, and solving software and system anomalies formerly and during rocket launches at the [Guiana Space Center](#).

**GTD - ESA Meteosat Satellites**  
*Data and Software Engineer*

**Barcelona, Spain**  
*June, 2019 - February, 2021*

Designing, developing and testing the data processing software of the series of [satellites Meteosat](#), operated by the European Space Agency.

## **Publications**

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### **Conference Papers**

[OOPSLA23] Marta Davila Mateu. "Synthesizing Recursive Programs through Dataflow Constraints". In: *Companion Proceedings of the 2023 ACM SIGPLAN International Conference on Systems, Programming, Languages, and Applications: Software for Humanity*. As part of the SRC. 2023, pp. 25–27.

### **Theses**

[Thesis19] Marta Davila Mateu. *Game Theory of Fishing: Sustainable Fishing Policies and its Worldwide Effects*. Maastricht University. B.Sc. thesis. 2019.

[Thesis18] Frederik Calsius, Marta Davila Mateu, Marion Meyers, Albert Negura, Hermann Ritter, and Ryan Yared. *Intelligent Robotic Game Device for the Assessment of Cognitive and Physical Capabilities in Children*. Research thesis. 2018.

## **Awards**

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### **SPLASH (OOPSLA) Student Research Competition 2023 - 2<sup>nd</sup> place**

Students could present their research to a panel of judges and conference attendees.  
Organized by SPLASH conference and the Association for Computing Machinery.

### **Maastricht Rethinking Hackathon 2018 - Winner**

36 hours to find a data-driven solution for a justice problem: LDS-Tool.  
Organized by HiiL, Ebay and the Dutch DIFC Courts.

### **Future of a Data-Driven Society Research Award 2017 - Winner**

Granting funds to a research proposal that leverages Data Science to benefit society.  
Organized by the Institute of Data Sciences, Maastricht University.

## **Other activities**

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### **Professional Sailor**

ISAF Youth World Champion 2014.

### **Social Media Content Creation**

Over 130,000 followers on Instagram: [@martadavma](#).

### **Public Speaker**

Presented events with over 300 attendees.  
Fluent natural languages: English, Spanish, Catalan, French.