

# Melody Sylvestre

## Full-stack software developer


I am a passionate and results-driven professional, changing my career from astrophysics to software development. I bring a unique blend of 10 years of coding experience, strong analytical thinking and self-learning skills, and comprehensive knowledge of modern software development technologies. I thrive on collaborating with others and leveraging my communication skills to convey complex technical concepts to diverse audiences.


### Tech skills


➤ JavaScript ➤ TypeScript ➤ PHP ➤ Python ➤ C ➤ HTML ➤ CSS ➤ SCSS  
➤ React.JS ➤ Node.js ➤ MySQL ➤ MongoDB ➤ REST APIs ➤ Git ➤ Agile

 Bristol

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## Projects

As a graduate of the iO Academy full-stack software development course, I have worked on several individual and team projects. You will find a small selection of my projects below and a complete list on my portfolio website.

### Pizza Toppings Rater

We used a MERN stack to create a website where users can choose their favourite topping among 2 randomly selected toppings or see the top 10 toppings from all the votes. On the frontend, I created the cards in which the toppings are displayed, using React.JS, Typescript and SCSS. I used Node.js, Express and Typescript on the backend to implement the endpoint that saves users' votes in the MongoDB database.

[Github](#)   [Live](#)

### Project Management API

We created a backend RESTful API for a project management app with PHP and MySQL. We used OOP to create endpoints following the SOLID principles for the application architecture, allowing users to display all the projects from the database or a specific project. I worked on the class containing the details of a project, unit testing with PHPUnit and error handling with exceptions.

[Github](#)   [Live](#)

## Experience

MARCH 2022 - DECEMBER 2022

### Operational Researcher – DEFRA (*Civil Service*), Bristol

I analysed data to inform the UK's international trade and borders policy. I developed an R app to help analysts and policy officers easily interrogate large datasets about UK imports and tariffs. I collaborated with other teams and government departments to gather data to address policy questions. I also presented my results in summaries accessible to non-specialists.

NOVEMBER 2015 - FEBRUARY 2022

**Postdoctoral research associate in astrophysics** – *University of Bristol, Bristol*

I studied the climate of Titan (Saturn's largest moon). I developed a bespoke Python package for the cleaning and analysis of a new type of astronomical data. I ran specialist software on Linux servers to analyse space mission data. I designed and led an observation project at the VLT, a premier astronomical observatory in Chile. I presented my results to other researchers through talks at international conferences and scientific peer-reviewed publications.

OCTOBER 2012 - SEPTEMBER 2015

**PhD Student in astrophysics** – *LESIA/University Pierre et Marie Curie, Paris, France*

I analysed space mission data about Saturn's atmosphere using Python and Fortran. I also developed Fortran numerical code for a new high-performance climate model of Saturn running on Linux servers. I was also a teaching assistant: I mainly supervised practicals about Unix and programming in C and Fortran.

## Professional Certification

FEBRUARY 2023

**Agile Professional Certification** – *iO Academy*

## Education

OCTOBER 2012 - SEPTEMBER 2015

**PhD in Astronomy and Astrophysics** – *Summa cum Laude*

University Pierre et Marie Curie (now Sorbonne Université), Paris, France

SEPTEMBER 2011 - JUNE 2012

**Master's degree in Geosciences and Planetary Science** – *77.5%, with High Honours*

University Pierre et Marie Curie, Paris, France

SEPTEMBER 2009 - JUNE 2011

**Master's degree in Astronomy and Astrophysics** – *65.5%, with Honours*

University Pierre et Marie Curie, Paris, France

SEPTEMBER 2006 - JUNE 2009

**Bachelor's degree in Physics** – *with Honours*

University Pierre et Marie Curie, Paris, France

## Interests and Voluntary Commitments

2011 - 2014 and 2018- 2019

**Astrophysics Outreach festival co-founder**, *De la Plage aux Étoiles, France*

I co-founded and organised an annual science outreach festival (up to 1000 visitors) for 6 years. I successfully applied for grants (€2,500) from the local county council and the French Astronomy and Astrophysics Society. I gave public talks and guided tours to a broad audience (children, adults with little background in astrophysics, and amateur astronomers). I also invited speakers and organised their accommodation.

I also hosted various science outreach events organised by different institutions (e.g., University of Bristol, We The Curious (Bristol), Paris Observatory) by giving public talks and guided tours.