Bristol
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Melody Sylvestre

Full-stack software developer

I am a software engineer with a background in astrophysics. Throughout my career, I have gained strong analytical thinking and self-learning skills, along with 12 years of experience in coding. I have regularly used my communication skills to convey complex technical concepts to diverse audiences in various settings such as scientific conferences or public talks. Eager to contribute to innovative projects and grow within a forward-thinking team.

Tech skills

- TypeScript
- Node.js
- Next.js
- PostgreSQL
- MongoDB
- GraphQL
- REST APIs
- Python
- HTML
- CSS
- Google Cloud Platform

Employment and Key Experience

SEPTEMBER 2023 - PRESENT

Associate Software Engineer – *Nando's UK, Remote*

I have worked on a suite of TypeScript applications hosted on Google Cloud Platform designed to manage staff profiles. I have developed code for a GraphQL API interrogating a PostGreSQL database and created frontend pages to visualise staff profiles using Next.js. I also helped to build services to monitor user profile events (e.g. creation of a new user) from Okta. Given the sensitive nature of this work, I used JWT tokens and Okta user authentication to control access to these applications. I implemented thorough unit, integration and E2E testing using Jest and Playwright as part of the CI/CD pipeline.

JANUARY 2023 - APRIL 2023

Full Stack Software Development Bootcamp – *iO Academy, Bath*

I developed 6 frontend, backend, and full-stack web applications with JavaScript, TypeScript, PHP, HTML and CSS, as part of a 4-month intensive bootcamp. I built frontends primarily with React.JS and styled them with CSS and SCSS, and created backends in Node.JS or PHP. I used test-driven development and built unit tests with Jest or PHPUnit to ensure the robustness of my code. I built REST APIs to fetch or post data to MySQL and MongoDB databases. All of my projects were version-controlled with Git. I worked on these projects as part of an Agile team of 7 software developers, using the Scrum framework. I was scrum master for one project and facilitated the communication and organisation of the team.

NOVEMBER 2015 - FEBRUARY 2022

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

I built Python and Fortran tools on Linux servers to analyse Cassini space mission data. I developed a novel Python package to clean and analyse astronomical data from the Very Large Telescope in Chile. I designed and led this observation project, including planning and supervising the observations in person in Chile. This 2-year project improved our understanding of Titan's atmosphere. I presented my results to other researchers through 10 seminars and talks at international conferences and 12 scientific peer-reviewed publications.

An article I wrote about Titan Google Scholar profile

OCTOBER 2012 - SEPTEMBER 2015

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

I created Python software to analyse Cassini space mission data of Saturn. I developed a new high-performance climate model of Saturn in Fortran and ran the simulations on Linux servers. I built bespoke Python tools to visualise the simulation results and collaborated internationally with other researchers from the Cassini team. As a teaching assistant, I supervised practicals about Unix and programming in C and Fortran for 2 years.

An article I wrote about Saturn Google Scholar profile

MARCH 2022 - DECEMBER 2022

Operational Researcher - *DEFRA (Civil Service), Bristol*

I developed an R app to interrogate large datasets about UK imports and tariffs easily, which improved my team's ability to address policy questions. I delivered detailed studies about critical issues around UK imports by analysing data and leveraging collaboration with other DEFRA teams and government departments.

Software Projects

You will find a small selection of my software personal and bootcamp team projects below and a complete list on my website.

Company website

I created a website for a fictional company, with a dynamic homepage, an "About us" page and a contact form. I created the pages and components with React.JS and SCSS. I used the PHP framework Slim to implement a REST API to either fetch content from the MySQL database for the homepage or save the answers to the contact form in the database.

Github Live

Pizza Toppings Rater

We used a MERN stack to create a website where users can vote for their favourite pizza toppings. 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

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