

## PERSONAL INFORMATION



## João Costeira Faria Gomes

 Braga (Portugal)

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**Gender** Male | **Date of birth** 19/01/1996 | **Nationality** Portuguese

## EDUCATION AND TRAINING

09-2019 – 12-2021

## Master's Degree in Computer Engineering

Level 7 QRQ

Universidade do Minho – Braga (Portugal)

**Profile on** – Formal Methods in Software Engineering  
– Cryptography and Security of Information

**Complementary** – Scripting in Natural Language Processing  
– WEB Application Development  
– Bioinformatics Applications

**Master's Thesis** Study of Nineteenth Century Orphanages Archives from Fafe

09-2015 – 09-2019

## Degree in Software Engineering

Level 6 QRQ

Universidade do Minho – Braga (Portugal)

09-2012 – 06-2015

## Secondary Education in Sciences and Technologies

Level 3 QRQ

Escola Secundária Carlos Amarante – Braga (Portugal)

PROFESSIONAL/COMPLEMENTARY  
EDUCATION

06-2022 – 08-2022

## Full Stack Web Development Course

Organized by the Department of Computer Science at the University of Helsinki

**Course:** Online course focused on the development of modern full stack web applications. The course material is available at <https://fullstackopen.com/en/about> and my answers/certificates are available at <https://github.com/joaocosteira/fullstack2022>.

**Main Technologies/Topics:** – React.js  
– Node.js and Express  
– Testing: (Jest, Cypress, Supertest)  
– Redux and React Router  
– GraphQL and Mongo  
– Typescript

01-2022 – 06-2022

## Continuing The Foundling Wheel Archive

Further Development of the Foundling Wheel Archive, a collaborative project between the Universidade do Minho and The Municipal Archive of Fafe.

**09-2021 – 04-2022 Assistant Role**

While I was finishing my Master's and further developing the Foundling Wheel project, I provided support to fifth year students starting their Master's Thesis in the nlp domain. Furthermore, I did class presentations to Linguist students (second year) at Universidade do Minho, in order to introduce them to the world of knowledge repositories and ontologies.

**22-10-2019 Sessão de estudo de Programação Funcional**

Organized by: Cesium(Centro de Estudantes de Engenharia Informática da Universidade do Minho)

**Workshop:** Helping First year students learning the functional programming language Haskell

**07-03-2019 Intro to Docker**

Organized by: Cesium(Centro de Estudantes de Engenharia Informática da Universidade do Minho)

**Workshop:** Introduction to containers, application deployment via docker.

**04-02-2019 – 08-02-2019 SEI, Semana da Engenharia Informática**

Organized by: Cesium(Centro de Estudantes de Engenharia Informática da Universidade do Minho)

**Conference - topics:**

- Automotive Infotainment System
- Small and Big Data at Farfetch
- Conselho de Carreira de um Engineering Manager! (... E porque a Farfetch é um ótimo lugar para começar!)
- Building Data Driven Products at Scale
- Big Data and AI/ML – A História Do Big Data na Primavera
- Gamification 1-0-1
- Transforming Mobility
- Startups for Geeks

**13-03-2018 Python Workshop**

Organized by: Cesium(Centro de Estudantes de Engenharia Informática da Universidade do Minho)

**Workshop:** Introduction to the Python programming Language

**PERSONAL SKILLS**

**Computer skills**

- React.js, Node.js, Express, Django Framework,
- React Redux, React Router, GraphQL
- Spacy, NLTK, Pronto Ontology, Owlready
- JavaScript, TypeScript, Python, Haskell, C, C#, Java, Prolog, SQL Server, Alloy, Electrum, SMV, TLA+, Pure Data
- Jupyter Notebook, SageMath, Cryptography, Sonarqube
- Why3, Frama-C, MiniSat, Uppaal
- HTML, CSS, SASS, Tailwind CSS, XML, XML Schema, XSL Stylesheet, DTD Schema, OWL, RDF
- Scikit-Learn, Scipy
- Figma, Oxygen XML Editor, Visual Studio, Linux, Mac OS, Microsoft Windows, Microsoft Office

- Job-related skills**
- Development of the Foundling Wheel Archive <http://arquivoexpostos.epl.di.uminho.pt/>. This application disseminate nineteenth century documents, currently preserved by the Municipal Archive of Fafe. Due to the advanced age and the degradation issues frequently found within a document, the application spellchecks and restores unreadable sections. The resulting cleaned documents are processed, automating the identification of concepts, attributes and the respective relations between them. These entities and relations are permanently stored accordingly to an ontology, which includes a reasoner component to derive additional knowledge. The knowledge graph and the transcribed documents are accessible via the web application.
  - *Spickles* <https://spickles.vercel.app/> development team member. Spickles is a mobile app used for recommending a movie, not only for a specific user, but helping the decision for an arbitrary sized group. Contains a recommendation engine, which based on the selected criteria, users preferences, reviews, and previously watched movies, a small pool of movies is generated and shared between the group members. Anonymously, each member is able to swipe left/right movies contained in the recommended list, assisting the decision process by achieving a consensus on what movie to watch.
  - Development of an Uppaal project to model, validate and verify a traffic “T” shaped intersection. The traffic congestion is controlled via traffic lights and furthered optimize with the introduction of sensors that regulate the light duration in response to the traffic flow currently detected.
  - Formal specification and verification of an Adaptive Exterior Light system for European cars. The model-checking system was developed in Alloy and TLA+.
  - Development of an ontology and knowledge extraction from eighteenth-century testament, written in Portuguese and Mirandês. A named entity and relation component were developed to automate the extraction of important information from unstructured text, in a triple format.
  - Development of a parser to compress drum machine files. This compressor generates a file with a small and light-way notation, to describe drum machine patterns in a smaller notation than the musical industry standard MIDI format.
  - Development of a cooking assistant web application. In this application, users are able to search for a wide range of recipes, receive recommendations and rate them. During the cooking process, the navigation is voice controlled, carefully assisting each step of the recipe. Additionally, the application allows the creation of shopping lists, find nearby stores and manage ingredients stock.
  - Member of the development team of a social network for students. In this social media application, each student is able to create a profile, create a group (private or public), join different groups, view profiles, follow users, search by topics (hashtags) and access a timeline with the recent posts. This project is a web app developed in node.js.

## Digital competences

### SELF-ASSESSMENT

| Information Processing | Content creation | Communication   | Problem solving | Safety          |
|------------------------|------------------|-----------------|-----------------|-----------------|
| Proficient user        | Proficient user  | Proficient user | Proficient user | Proficient user |

[Digital competences - Self-assessment grid](#)

**Mother tongue** Portuguese

## Other languages

|         | UNDERSTANDING |         | SPEAKING           |                   | WRITING |
|---------|---------------|---------|--------------------|-------------------|---------|
|         | Listening     | Reading | Spoken interaction | Spoken production |         |
| English | A2            | A2      | A1                 | A1                | A2      |

- Communication skills**
- Good communication skills.
  - Good ability of written communication.
  - Oral presentation experience.
  - Strong sense of responsibility.

- Organisational / managerial skills
- Good capacity for coordination and leadership.
  - Good organizational skills, coordination and autonomy acquired during academic training.
  - Good capacity of teamwork.

Driving licence B