

RAFAEL BELCHIOR

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EDUCATION

Instituto Superior Técnico, Lisbon, Portugal *Sept 2019 - Present*
Ph.D. candidate - Information Systems and Computer Engineering

Instituto Superior Técnico, Lisbon, Portugal *Sept 2017 - Dez 2019*
MSc in Information Systems and Computer Engineering *Grade 17.46/20, Master Thesis 19/20*

Warsaw University of Technology, Warsaw, Poland *Feb 2018 - July 2018*
MSc in Information Systems and Computer Engineering (Erasmus) *Grade: 4.5/5*

Instituto Superior Técnico, Lisbon, Portugal *Sept 2014 - July 2017*
BSc in Information Systems and Computer Engineering *Grade: 15.4/20*

RESEARCH INTERESTS, SKILLS & TOOLS

- Research: Blockchain Interoperability, Blockchain Access Control, Digital Identity
- Programming Languages: Javascript, Python, Java
- Scientific Programming: NumPy, SymPy
- Data Science: scikit-learn, pandas
- Web: Angular, NodeJS, SpringBoot, Thymeleaf, Docker, Google Cloud.

WORK EXPERIENCE

Linux Foundation *June 2020 – present*
Intern

- Preparing a classroom-in-a-box, for an introductory computer science course on distributed systems and algorithms that can be offered to universities that wish to use Hyperledger Fabric in their curriculum. This includes study materials, sample lab experiments and quizzes and tests that teach computer science students about distributed systems and consensus algorithms and cryptography.

Instituto Superior Técnico, Lisbon, Portugal *Sep 2018 – present*
Teaching Assistant

Performance on courses are evaluated by students in a scale 1-9 (9 is the highest).
IT Infrastructure Management and Administration (2018/2019): 9/9 Software Engineering (2018/2019): 8.25 User Centered Design (2019/2020): 9/9 Autonomous Agents and Multi-Agent Systems (2019/2020)

IGFEJ, Ministério da Justiça, Lisbon, Portugal *Sep 2018 – April 2020*
Blockchain Engineer

- Research and development project. During the duration of the master thesis, I idealized, architected and developed a solution that aims to protect justice data with Blockchain, following state-of-the-art approaches. Implemented a prototype with Hyperledger Composer and a full solution with Hyperledger Fabric 2.0.

Webvolt, Elvas, Portugal *Jul 2018 – Dec 2018*
Founder & Freelancer

- Lead a team that performed digital transformation services to companies based in Elvas, Portugal.

Everis, Lisbon, Portugal

Jun 2016 – Aug 2016

Fullstack Developer

- Development of a set of features which allow real time information visualization.

AWARDS

- Hyperledger's Scholarship Program 2020, awarded to "a combination of need and impact" (2019)
- Excellent teaching assistant distinction for the academic year 2018/2019 at Técnico Lisboa
- European Innovation Academy participation scholarship Técnico Lisboa (2017)
- Técnico Lisboa's Academic Merit diploma (14/15, 15/16, 18/19)

PUBLICATIONS

JusticeChain: Using Blockchain to Protect Justice Data

Oct 2019

R. Belchior, M. Correia, A. Vasconcelos

- On the Move to Meaningful Internet Systems: OTM 2019 Conferences

Towards Secure, Distributed, and Automatic Audits with Blockchain

May 2020

R. Belchior, M. Correia, A. Vasconcelos

- European Conference on Information Systems 2020

Hyperledger Fabric Attribute-Based Access Control System: A Step Towards Distributed Access Control Using Blockchain

submitted

S. Rouhani, R. Belchior, R. Cruz & R. Deters

- Internet and Web Information Systems

A Survey on Blockchain Interoperability: Past, Present, and Future Trends

ongoing

R. Belchior, M. Correia, A. Vasconcelos & S. Guerreiro

Authorization based on Decentralized Identity

ongoing

B. Putz, R. Belchior, S. Guerreiro, G. Pernul, M. Correia, & A. Vasconcelos

PROJECTS

Towards Blockchain Interoperability with Hyperledger

- Project proposed by professor Rui Cruz, Sara Rouhani and I, in which blockchain interoperability is explored. The project received a grant from the Hyperledger Foundation.

Hyperledger Fabric Based Access Control

- Project proposed by professor Rui Cruz and I, in which blockchain access control is explored. The project received a grant from the Hyperledger Foundation.

- The project has been accepted to make part of Hyperledger Labs, a Hyperledger project incubator.

Grupo de Contacto Com Empresas (GCE)

GCE is a computer science student's group from Técnico Lisboa. We manage an open-source project directed to students. Achievements:

- Coordinated a team of 11 people. (raised the team from 2 to 11).
- Fundraising (\$4000+).
- Organized programming competitions with a total of 140+ participants.
- Idealized, created and executed the following projects:
- GCE Platform (www.gce-neiist.org) - Started the platform project, using the MEAN stack. (500+users)
- GCE-Thesis (www.gce-neiist.org/thesis) - Decision Support System for students to choose their master thesis topic (350+users). Approved by the course coordinator. Providing useful analytics about theses to the professors.
- GCE-Chatbot (www.gce-neiist.org/chatbot) - Helps students choose their master theses via a friendly chatbot.
- GCE-InsideView (www.gce-neiist.org/articles) - Interviewed professors from Técnico Lisboa, and published the interviews on our Medium blog.

ACADEMIC, EXTRACURRICULAR

- Technological short-term course (10 days) about Rehabilitation with Technology: Prague, Czech Republic (2019)
- Technological short-term course (10 days) about Environmental Sustainability: Reykjavik, Iceland (2018)
- Representing Técnico Lisboa at Warsaw University of Technology, as a Técnico Ambassador, in 2018.
- European Innovation Academy Team Leader / CTO (2017).
- Técnico MOOC on Digital Transformation (2017)
- Technological short-term course (10 days) about 3D Printing: Barcelona, Spain (2017)
- Participation in the final exercises of command and leadership at the Air Force (2015)
- End Of Course Certificate (C1.1 – Oxford School) (2015)

EXTRA-CIRRUCULAR

- Startup Team Leader at Web Summit (2017).
- Mentor at Técnico Lisboa. Welcoming new students (nacional and international, 2015-2017).
- Front-end developer at TEDxIST Alameda, where I built the organization's website prototype (2017).
- Participation in Innspire Lisbon at Microsoft Lisboa (2017)
- Basic Life Support course (2017)