



Henrique M. Borges

Curriculum Vitae

Personal information

Name Henrique João Machado Borges
Birth 16th of September of 1999, Vila Pouca de Aguiar
Nationality Portuguese

Education

2024–Present **PhD in Network Science**, *NetSi - Northeastern University*, London
2021–2023 **MSc in Physics Engineering**, *Instituto Superior Técnico*, Lisbon, Grade: 17/20
2017–2021 **BSc in Physics Engineering**, *Instituto Superior Técnico*, Lisbon, Grade: 16/20
2014–2017 **Secondary studies**, *Escola Secundária de Vila Pouca de Aguiar*, Vila Pouca de Aguiar, Grade: 19/20
National Exams: Physics and Chemistry - 190/200, Mathematics - 200/200

Research Experience

2022–2023 **Master thesis**, *IST*, Lisbon
Project supervisors: F. L. Pinheiro and I. P. Lopes
In this work, we tried to understand how fast and to what extent individual rewiring preferences bridge initially weakly connected communities and how likely it is for them to reach a consensus, in a context of complex information diffusion.

2021–2022 **Research intern**, *CeFEMA-LaPMET*, Lisbon
Project supervisors: M. Gonçalves, E. Castro and P. Ribeiro
In this internship, we explored the topological properties of one-dimensional quasiperiodic structures.
The research work is summarized in the following *recommendation letter*.

2019 **Research intern**, *LIP*, Lisbon
Project supervisors: M. Araújo, P. Faccioli and J. Seixas
In this internship, we measured the polarization of prompt J/ψ mesons in proton-proton collisions at $\sqrt{s} = 8$ TeV, using a dimuon data sample collected by the CMS experiment at the LHC.
The project culminated in a *public presentation* and lead to the writing of a *working paper*.

Scientific Publications

- [1] **How Social Rewiring Preferences Bridge Polarized Communities**, *Chaos, Solitons & Fractals* 180, 114594 (2024), H. M. Borges, V. V. Vasconcelos, and F. L. Pinheiro

Scientific Presentations, Invited Talks and Conferences

2024 **Presenter in the 1st British NetSci Symposium**, *British Chapter of the Network Science Society*, London, United Kingdom

Referee Activities

Invited **Applied Network Science**, *Springer*; **Chaos, Solitons & Fractals**, *Elsevier*

Awards and Prizes

International

2016 **Bronze Medal in 40th Paulista Mathematical Olympiad**, *Sociedade Brasileira de Matemática*, Coimbra, Portugal

National

2017 **Portuguese Qualifying Competition for the 48th International Physics Olympiad**, *Sociedade Portuguesa de Física*, Coimbra, Portugal

2017 **3rd place in "Canguru Matemático sem Fronteiras"**, *Departamento de Matemática da Universidade de Coimbra*, Portugal

Extracurricular Activities

2015-2017 **Participation in "Projecto Quark"** (*school that ensures the selection/preparation of the Portuguese representatives for international Physics competitions*)

2016-2017 **Participation in "Projecto Delfos"** (*school that ensures the selection/preparation of the Portuguese representatives for international Mathematics competitions*)

Voluntary work

2024 **Volunteer at the Conference on Complex Systems 2024** (*I was responsible for the logistical support for the conference's organising team throughout the event*)

2019-2020 **Mentor** (*I was responsible for the support of three first-year students in Instituto Superior Técnico. I helped with their reception and integration into the institution*)

2018 **Guide during the 49th International Physics Olympiad** (*I was responsible for the guidance of the Moldovan team throughout the competition*)

Languages and Computational Skills

Languages

Portuguese Native

English Fluent (*IELTS Academic Exam with Overall Band Score of 7,5*)

Spanish Elementary

Computational Skills

Experience in different **Programming Languages** (C, C++ and Python), **Software Tools** (*Mathematica* and *Root*) and **Text Edition Tools** (*Latex*, *Office* and *Adobe*)

Miscellaneous

Sports Taekwondo (2nd kup) and athletics (participation in several national competitions, such as "Olimpico Jovem Nacional")

Music Violin (Grade 5).

London – United Kingdom

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