



Bernardo GAMEIRO



UNDERGRADUATE PHYSICIST

About Me

I'm an Engineering Physics student with an interest in Informatics.

I like to learn new things and spend time on my own projects. I'm curious about Plasma, HPC, Nuclear Fusion and Scientific Computing.

Online

BGameiro.me 
contact@bgameiro.me 
BGameiro 
BGameiro 
BGameiro2000 

Skills

Hard Skills

Physics • Engineering
Informatics • Computation
Automation • Spreadsheets
Gnuplot • OBS • Servers
Solidworks • EAGLE

Soft Skills

Adaptability • Critical Thinking
Problem Solving • Teamwork
Willingness to learn
Commitment • Dedication

Languages

Portuguese • NATIVE
English • C2 (CPE+TOEFL)
Italian • A2

Relevant Coursework

Electrodynamics
Statistical Physics
Quantum Mechanics
Math Methods for Physics
Programming (I,II)
Numerical Methods
Experimental Physics (I,II,III)
Radiation Physics (& Lab)
Continuum Mechanics

Formal Education

Bachelor of Science in Engineering Physics

2018–2021

FACULTY OF SCIENCES, UNIVERSITY OF LISBON

- Certificate of Academic Merit in the first year.
- Rich background in Physics, Mathematics and Engineering.
- Great focus on numerical methods, experimentation and real-world applications.
- Broadened my horizons regarding the several fields and transferable skills of Physics.
- Fostered my interest for nuclear, continuum, experimental and computational physics.

Complementary Classes in Informatics

2020–2021

FACULTY OF SCIENCES, UNIVERSITY OF LISBON

- Complementary classes as external student.
- Project oriented.
- Enrolled with the intent of expanding upon my programming skills.
- Classes: Programming II, Web Technologies, Computer Networks and Operating Systems.
- Skills: programming practices, teamwork, parallelization, version control.

Summer School in Ionizing Radiation

2020

CENTER FOR NUCLEAR SCIENCES AND TECHNOLOGIES, UNIVERSITY OF LISBON

- Attended the 1st Summer School of C2TN.
- "Science and Applications of Ionizing Radiation in Health, Materials and the Environment"
- Lectures and laboratories.
- Subjects: ionizing radiations applications, surface analysis, background radiation analysis, PIXE, material doping, radiopharmaceuticals, archeometry.

Experience

Department of Pedagogy

2020 – 2021

NFEF - ASSOCIATION OF PHYSICS AND ENGINEERING PHYSICS STUDENTS OF FCUL

- Website creator and maintainer.
- Contributor to the new communication system for students, promoting collaboration and socialization.
- Organization of workshops and contests.
- Staff and outreach for the "Physics Outside Academia 2021" (FFA 2021).
- Skills: JAMstack, organization skills, event preparation, industry outreach, remote work.

Department of Professional Opportunities

2020

PHYSIS - PORTUGUESE ASSOCIATION OF PHYSICS STUDENTS

- Staff of the Physis Scientific Congress 2020.
- Outreach worker of the Physis Opportunities project.
- Developer of the database.
- Provided me with a broader knowledge of the applications of physics in several industries.
- Skills: SQL, organization skills, event preparation, outreach, teamwork, remote work.

Projects

Semiconductor Detector of Ionizing Radiation

2021

PERSONAL & ACADEMIC PROJECT

- Photodiodes as β and γ sensors.
- Study of previous designs and current components.
- Use for citizen science.
- Skills: circuit design, simulation and prototyping, instrumentation, Autodesk EAGLE.

HomeLab Network

2016 – 2021

PERSONAL PROJECT

- Administration of computer network with enterprise and consumer hardware.
- Used for running simulations for physics classes and hosting services.
- Network consisting of multiple Linux devices: a router, a NAS, four servers, and a cluster.
- Skills: server administration, computer networking, system maintenance, parallelization, Docker, VMs, VPN.

Further Education

Introduction to Particle Accelerators

NORDIC PARTICLE ACCELERATOR PROJECT, COURSERA

2021

- Accelerators as light, neutron sources and as particle colliders.
- Overview of the different generations of Accelerators, their technologies and applications.

Method Validation

INTERNATIONAL ATOMIC ENERGY AGENCY

2021

- Comparison and validation of results between different methods.
- Great focus on nuclear techniques: XRF and PIXE.

Particle Physics: an Introduction

UNIVERSITY OF GENEVA, COURSERA

2020

- Matter and forces, Nuclear Physics, Accelerators and detectors, Electromagnetic interactions, Hadrons, Strong and Electro-weak interactions, Dark matter and energy.
- Overview of Modern Physics projects and research fields.
- Helped me define my academic path.

Statistical Thermodynamics Specialization

UNIVERSITY OF COLORADO BOULDER, COURSERA

2020

- Fundamentals of Macroscopic and Microscopic Thermodynamics, Quantum Mechanics, Ideal Gases, Dense Gases, Liquids and Solids, Non-Equilibrium Applications of Statistical Thermodynamics.
- Introduction to concepts studied in Statistical Physics during my BSc.

Python in High Performance Computing

PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE, FUTURELEARN

2020

- Overview of multiple practical ways of improving the performance of Python programs.
- Identifying bottlenecks, performance analysis, NumPy, interfacing with compiled code, parallelization, MPI.
- Provided practical experience for projects such as HomeLab.

OSS Development, Linux and Git Specialization

THE LINUX FOUNDATION, COURSERA

2020

- Open Source Software Development Methods, Linux for Developers, Linux Tools for Developers and Using Git for Distributed Development.
- Filled gaps related to self-taught tools like Git, Linux and OSS.
- Positively impacted my experience regarding development of projects.

How to Write and Publish a Scientific Paper

ÉCOLE POLYTECHNIQUE, COURSERA

Ongoing

- Project-based online course.
- Process of writing a scientific paper: format, tools available, literature review, research, choosing a journal and submitting a paper.
- Took this course as preparation for graduate studies.

Understanding Research Methods

UNIVERSITY OF LONDON, COURSERA

Ongoing

- Project-based online course.
- Provided useful insights and fostered discussions.
- Main focus: research question, literature review and management skills.
- Took this course as preparation for graduate studies.

How to Manage a Remote Team

GITLAB, COURSERA

2021

- Insightful regarding international collaborations.
- Types and transition to remote teams.
- Project-based online course.

Interests

Physics

Nuclear • Plasma • Fusion
Computational • Experimental
Accelerators • Detectors

Informatics

Scientific Computing • HPC
Distributed Computing
Parallel Computing

Informatics

Programming

Python • Mathematica
Bash • HTML/CSS/JS

Platforms

Linux • GitLab
Archlinux • unRAID

Technologies

LaTeX • LuaTeX • Pandoc
Git • CI/CD
Docker • GoHugo

Volunteering

unRAID • CA MAINTAINER
ESO • TRANSLATOR
iFixit • TRANSLATOR
ICNF • TREE PLANTING
BlueMaxima • ARCHIVIST

Events

Attendee

Web Summit 2016 & 2018
FCUL Research Day 2019
ENEF 2020
Spanish Fusion HPC 2020

Participation

Hands on Particle Physics
C2TN Open Day 2019
Hacktoberfest 2020
Advent of Code 2020

Staff

Physis Congress 2020
NFEF FFA 2021

Affiliations

FCUL • STUDENT
Physis • MEMBER
NFEF • MEMBER
SPF • MEMBER
EPS • MEMBER
IOP • ASSOCIATE MEMBER
IEEE • STUDENT MEMBER
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