Afonso Albuquerque

BIOMEDICAL ENGINEER & DATA ANALYST

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Porto, Portugal

LANGUAGES

Portuguese: Native

English: Fluent | Spanish: B1

SKILLS

- **Programming Languages** (Python, C/C++, MatLab);
- **Data Visualization Tools** (MS SQL, PostgreSQL, PowerBI, Excel)
- **Querying** (M language, DAX)
- **Cloud Services** (AWS, Azure)
- **Data Science Frameworks** (SciPy, Scikit-learn, Pandas, TensorFlow, Keras)
- **Computer Aided Design** (AutoCAD, SolidWorks);
- **Lab Training** (Zeta-Sizer, Goniómeter, Bright-field Microscope, Confocal Microscope, Dynamic Mechanical Analysis);
- **Cell Culture Laboratory** (Laminar Flow Chambers, Cell handling and maintenance, QMS proceedures);
- **Image Processing** (ImageJ Fiji);

PUBLICATIONS

- **"Effect of Hyaluronan Molecular Weight on the Stability and Biofunctionality of Microfibers Assembled by Interfacial Polyelectrolyte Complexation"** was published by the journal ACS Applied Materials & Interfaces"
- This Work will be presented in Germany this May at **TERMIS-EU 2025**

PASSIONS

Volunteering

- Raiz Project

Organization: Colégio Nossa Senhora do Rosário
Activities: Support in Study Centers.

- PAS Project (Helping Homeless People)

Organization: Colégio Nossa Senhora do Rosário
Activities: Preparation and distribution of food kits for the homeless.

Sports

Athlete Federated by the Portuguese Basketball Federation since 2008.

EXPERIENCE

Researcher | 3B's Research Center
Portugal — Dec 2022 - Dec 2024

- Led a team in the development of a project to create microfibers based on hyaluronic acid and collagen. Interfacial Polyelectrolyte Complexation (IPC) was used, resulting in the production of bioactive and biocompatible fibers.
- Employed advanced analytical tools, including a Goniometer, a Dynamic Mechanical Analyzer (DMA), and various microscopy techniques to assess fiber properties.
- Conducted in vitro testing using cell cultures to evaluate the fibers' bioactivity and biocompatibility. Underwent specialized training to properly maintain and handle cells in controlled cell culture laboratories.
- Produced and validated microfibers with promising properties for nerve tissue engineering, demonstrating their potential for neuronal regeneration applications.
- See "Publications" below

EDUCATION

Data Analyst Certification | Udemy
Jan 2025 - Feb 2025

- Developed proficiency in MS SQL for efficient data storage, retrieval, and manipulation, along with expertise in Power Query, DAX, and M Language to create dynamic data models.
- Enhanced analytical skills using Excel and Power BI, leveraging advanced functions and visualization techniques to interpret complex datasets effectively.

Machine Learning & Data Science Certification | Udemy
Dec 2024 - Feb 2025

- Developed proficiency in Python and relevant libraries to analyze and model complex datasets, applying algorithms such as regression, classification, clustering, and deep learning to extract meaningful insights.
- Gained expertise in data sourcing, visualization, and decision science, leveraging analytical techniques to derive actionable insights from data.

AWS (Amazon Web Services) Certification | Udemy
Feb 2025 - Mar 2025

- Gained comprehensive knowledge of cloud computing concepts and AWS services, progressing from fundamental principles to advanced topics through a beginner-friendly, highly visual learning approach.
- Built real-world skills using AWS Free Tier, engaging in hands-on exercises with core AWS services, providing a strong foundation for pursuing AWS certifications such as Cloud Practitioner or Solutions Architect.

Internship | 3B's Research Group
Sep 2022 - Dec 2022

- Completed training on various laboratory equipment, including the Goniometer and Zeta-Sizer, as well as general training for work in common laboratory settings.
- Ensured compliance with laboratory safety and quality standards through specialized training.
- Underwent instruction to work in a Cell Culture Lab, gaining expertise in cell handling and maintenance.
- Developed collaboration skills by working alongside researchers and lab technicians to enhance work efficiency.

MSc in Biomaterials, Rehabilitation and Biomecânics
UM - Universidade do Minho — Oct 2021 - Dec 2024

- Focused in Mechanical Engineering related subjects such as: Biomechanics, Mechanical Components and Tribology, and Biomechanical Modeling and Simulation;
- Focused in Biomaterials with important subjects such as: Advanced Biomaterials and Biomimetics, Tissue and Stem Cell Engineering, and Multi-Physical Systems, Biofluidics and Biocorrosion.

BSc in Biomedical Engineering
UM - Universidade do Minho | ISEP - Instituto Superior de Engenharia do Porto — Oct 2018 - Jul 2021

- Core subjects: Drawing and Graphic Representation, Structure and Properties of Materials, Fluid Mechanics, Solid Mechanics, Complements of Electronics and Digital Systems, Human Physiology, Chemistry-Physics of Materials, Continuous and Discrete Signal Processing, Biomaterials and Material Processing