Beatriz Pedrosa Cepa

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Affiliation

Apr 2023 – Present ◇ **Research Assistant**, High-Assurance Software Laboratory, INESC TEC.
Out 2021 – Out 2022 ◇ **M.Sc. Student**, High-Assurance Software Laboratory, INESC TEC.

Education

Apr 2023 – Present ◇ **Ph.D. in Informatics**, University of Minho.

Sep 2017 – Oct 2022 ◇ **M.Sc. in Biomedical Engineering**, University of Minho.
Specialization: Medical Informatics.
Dissertation title: *Deep Learning for Image Generation*.

Sep 2011 – Aug 2017 ◇ **English Course**, The Kids' Club.
B2 Certification.

Publications

Journal Articles

1. **B. Cepa**, C. Brito, and A. Sousa, "To FID or not to FID: Applying GANs for MRI image generation in HPC," *bioRxiv*, 2024. DOI: 10.1101/2024.09.27.615343. eprint: https://www.biorxiv.org/content/early/2024/09/29/2024.09.27.615343.full.pdf.

2. A. Oliveira, **B. Cepa**, C. Brito, and A. Sousa, "MAC: An artifact correction framework for brain MRI based on deep neural networks," *bioRxiv*, 2024. DOI: 10.1101/2024.08.02.606374. eprint: https://www.biorxiv.org/content/early/2024/08/06/2024.08.02.606374.full.pdf.

Conference Proceedings

1. **B. Cepa**, C. Brito, and A. Sousa, "Generative adversarial networks in healthcare: A case study on MRI image generation," in *2023 IEEE 7th Portuguese Meeting on Bioengineering (ENBENG)*, 2023, pp. 48–51. DOI: 10.1109/ENBENG58165.2023.10175330.

Experiences

M.Sc. Dissertation Supervision

Sep 2023 – Nov 2024 ◇ **Federated Learning-based Artifact Correction in Brain MRI scans in HPC environments**, INESC TEC and University of Minho.
Co-supervisor of Alícia Oliveira.
Co-advised with Cláudia Brito and António Sousa.

Sep 2022 – Present ◇ **Benchmarking Distributed Machine Learning Frameworks for Healthcare Use Cases**, INESC TEC and University of Minho.
Co-supervisor of Luís Branco.
Co-advised with Cláudia Brito and António Sousa.

Experiences (continued)

Talks

Apr 2024
- **Latex + Mendeley**
  Workshop Speaker in WEEKSHOP.
  University of Minho, Portugal.

Feb 2024
- **Medical Imaging Informatics: A Whole New World**
  Workshop Speaker at the XIX Biomedical Engineering Summit.
  University of Minho, Portugal.

Jun 2023
- **Generative Adversarial Networks in Healthcare: A case study on MRI Image Generation**
  Poster Presentation in the 7th IEEE Portuguese Meeting on Bioengineering (ENBENG 2023).
  Porto, Portugal.

Certification

Apr 2016
- **Certified Level B2 in English**. Awarded by the University of Cambridge.

Committees

Mar 2024 – Present
- **School of Engineering Board**
  Student Representative.
  University of Minho, Portugal.

May 2023 – Present
- **Course Committee of the Doctoral Program in Informatics**
  Student Representative.
  University of Minho, Portugal.

Associations

Oct 2020 – Apr 2021
- **Gabinete de Alunos de Engenharia Biomédica (GAEB)**
  Vice-Director of the Recreational Department.
  University of Minho, Portugal.

Events

Sep 2024
- **ACM Europe Summer School on HPC Computer Architectures for AI and Dedicated Applications**, Barcelona, Spain.
  Participant.
  Event dates: 01/09/2024 – 06/09/2024.

Feb 2021
- **XVI Biomedical Engineering Summit**, University of Minho, Portugal.
  Member of the Organizing Committee.
  Event dates: 18/02/2021 – 20/02/2021.

Achievements

- **Implemented two GAN architectures** (DCGAN and WGAN-GP) to generate MRI images of the brain in a distributed environment.
- **Collaborated with the School of Psychology** of the University of Minho to study and predict the caregiver burden of patients with Alzheimer's Disease.
- **Certificate of Honor for Outstanding Performance** in the ACM Europe Summer School on HPC Computer Architectures for AI and Dedicated Applications.

Scholarships

May 2023 – Present
- **Research Grant** (10241/BI-M-ED_B2/2023).
  Awarded by INESC TEC.

Mar 2022 – Sep 2022
- **Research Initiation Grant** (9547/BII-E_B4/2022).
  Awarded by INESC TEC.

Skills

Languages
- **Portuguese.** Native language.
  English. Reading and Listening: C2; Writing: C1; Speaking: B2.
  French. Reading and Listening: B1; Writing and Speaking: A1.

Technical Skills
- **Python.** Machine and Deep Learning models.
  Medical Imaging Informatics. Image pre-processing, image generation.
  Distributed Computation. SLURM.

Soft Skills
- Academic Research, Team Work, Problem Solving, Public Speaking.