DR. MARIA BEATRIZ WALTER COSTA

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EU permanent resident (Germany)
https://waltercostamb.github.io/

SUMMARY

Bioinformatician with 15+ years of experience in biological data analysis and interpretation, with strong skills in pipeline development. Proven track record of interdisciplinary collaboration and support of data-driven decisions. Seeking a senior role in the biotechnology industry with real-world impact.

WORK EXPERIENCE

Research Associate (fixed-term contract) Jena, Germany
Friedrich-Schiller University Jena *10/2022 - 09/2025*

- Led a project in Microbiology with large-scale data and collaborators (Machine Learning, python)
- Designed and implemented a scalable, reproducible high-throughput pipeline (snakemake, slurm)
- Co-supervised a Doctoral researcher and co-designed a Masters' level course on Big Data analysis
- Regularly presented results to interdisciplinary audiences at national and international conferences

Research Associate (fixed-term contract) Leipzig, Germany
University of Leipzig Medical Center *02/2020 - 12/2021*

- Developed and delivered three applied projects in Laboratory Medicine (Statistics, R, SAP-based data)
- Organized and structured a clinical knowledge dataflow, improving consistency and downstream analysis
- Worked in close collaboration with physicians to support decision-making and improve patient safety

Consultant (fixed-term contract) Brasília/DF, Brazil
Brazilian Agricultural Research Corporation (EMBRAPA)/Agroenergy *11/2018 - 03/2019*

- Designed and executed a project to optimize industrial ethanol production (Bioinformatics, R)
- Worked closely with biologists to support experimental decision-making in engineered strain development

Research Associate (fixed-term contract) Leipzig, Germany
University of Leipzig *04/2017 - 03/2018*

- Led and implemented a project to improve understanding of ncRNA evolution (Bioinformatics, perl)
- Developed and released two tools for ncRNA analysis (Bioinformatics, perl, bash)

EDUCATION

Dr. rer. nat. in Computer Science (*Magna cum laude*) 2013 - 2018

- University of Leipzig, Faculty of Mathematics and Computer Science, Chair of Bioinformatics (Germany)
- Dissertation: "Adaptive Evolution of Long Non-Coding RNAs"

M. Sc. in Molecular Biology 2010 - 2012

· University of Brasília, Institute of Biological Sciences, Graduation Program of Molecular Biology (Brazil)
· Thesis: "Genetic Variability of anti-DNA antibodies"

B. Sc. in Biological Sciences (Grade: 4.3/5.0) 2006 - 2010

· University of Brasília, Institute of Biological Sciences (Brazil)

LANGUAGES

English	Near-native speaker (C2, Cambridge CPE)
Portuguese	Native speaker (C2)
German	Advanced (C1)
Spanish	Advanced (B2/C1)

TECHNICAL SKILLS

Programming	python, R, perl, bash, SQL (mySQL)
Workflow & Automation	Snakemake
Bioinformatics	omics analysis, differential expression, mapping, sequence analysis, alignment, NGS analysis, ncRNAs, annotation, genome assembly, machine learning, software development
Cluster Platforms (user)	Slurm, Sun Grid Engine (SGE)
Version Control	Git, GitHub
Others	Linux, Jupyter Notebook, Latex, Markdown

MAIN PRODUCTS (FULL LIST ON PERSONAL WEBSITE)

- `FxTractor`: scalable high-throughput pipeline for feature extraction from microbial genomes

  `https://github.com/MGXlab/FxTractor`

- `SSS-test`: the first tool of the scientific community that detects adaptive selection in ncRNAs

  `https://github.com/waltercostamb/SSS-test`

- `genes-synteny`: tutorial and scripts to visualize gene synteny and homology

  `https://github.com/MGXlab/genes_synteny`

MAIN SCIENTIFIC PUBLICATIONS (FULL LIST ON PERSONAL WEBSITE)

- **Walter Costa MB** *et al.* The Clinical Decision Support System AMPEL for Laboratory Diagnostics: Implementation and Technical Evaluation. *JMIR Med Informatics*, 2021

  `https://medinform.jmir.org/2021/6/e20407`

- **Walter Costa, MB** *et al.* SSS-Test: A novel test for detecting selection on the secondary structures of non-coding RNAs. *BMC Bioinformatics*, 2019

  `https://doi.org/10.1186/s12859-019-2711-y`