Fernando Cruz

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Experience

SOFTWARE ENGINEER | OMNIUMAI, PORTUGAL

JUN 2021 – DEC 2023 (2 YR 7 MOS) | HYBRID | FULL-TIME/PART-TIME

Senior software engineer at OmniumAI, a startup from Braga, Portugal. I have been directly involved in developing omnia, an automated machine learning platform for biological and chemistry data. Omnia can perform automated feature engineering and generate predictive models for drug classification, antibody prediction, and more. In addition, I have also been directly involved in the development of CibusAI, an AI-driven food reformulation platform. I have used data engineering techniques and ETL tools to create end-to-end data pipelines. I also worked as a full-stack developer in developing data engineering solutions and web applications (backend and frontend) for major clients.

- Data Science
- Data engineering
- Full-stack engineering

INVITED ASSISTANT PROFESSOR | UNIVERSIDADE DO MINHO, PORTUGAL

SEP 2022 – FEB 2023 (6 MOS) | ON-SITE | PART-TIME

Assistant Professor at the Department of Informatics, University of Minho. I taught several lectures on machine learning applied to biological data. I also taught workshops on Unix and Docker.

- Teaching
- Data Science
- Unix & Docker

PH.D. STUDENT | CENTRE OF BIOLOGICAL ENGINEERING, PORTUGAL

OCT 2018 – SEP 2022 (4 YRS) | ON-SITE | FULL-TIME

Ph.D. student at the Centre of Biological Engineering (CEB), University of Minho. I developed a computational framework for the analysis of biological data. This framework includes a data engineering solution using ETL tools to collect, transform, and integrate dispersed sources of biological data. This data warehouse of biological data allows scientists to retrieve extremely valuable insights about the regulatory mechanisms of organisms. I have also developed a web application (backend and frontend) and reporting tools to allow users to visualize and analyze the data warehouse.

- Data Science
- Data engineering
- Full-stack engineering

RESEARCH SCIENTIST | ITQB-UNL, PORTUGAL

FEB 2018 – SEP 2018 (8 MOS) | ON-SITE | FULL-TIME

Research scientist at ITQB-UNL. I was responsible for maintaining and supporting the bacterial imaging cluster facility, involving microscopy imaging, image analysis, and data management.

- Data management
- Python developer

INTERN | CHR. HANSEN A/S, DENMARK

FEB 2017 – JUL 2017 (6 MOS) | ON-SITE | FULL-TIME

Internship at Chr. Hansen holding A/S, a world-leading bioscience company. This internship was focused on the development of bioinformatics computational tools.

- Bioinformatics
- Python developer

Education

PHD IN BIOMEDICAL ENGINEERING | UNIVERSIDADE DO MINHO, PORTUGAL
2018 – 2022 (4 YRS)

MASTER'S DEGREE IN BIOINFORMATICS | UNIVERSIDADE DO MINHO, PORTUGAL
2015 – 2017 (2 YRS)

BACHELOR'S DEGREE IN APPLIED BIOLOGY | UNIVERSIDADE DO MINHO, PORTUGAL
2012 – 2015 (3 YRS)

Skills

Technical:

- Full-stack development
- Data Science
- Data Engineering
- Machine & Deep Learning
- Docker
- Git
- GitHub Actions
- Azure
- Databricks
- Python
- SQL
- NumPy/Pandas
- PySpark
- Scikit-Learn
- PyTorch
- Django
- PostgreSQL
- MS SQL Server
- JavaScript & TypeScript
- HTML & CSS
- React.js

Languages:

- Portuguese (native)
- English (C1 / Full professional proficiency)

Output & Awards

Awards:

- Academic Merit Scholarship | 2020 | Universidade do Minho
  Ph.D. scholarship awarded for scholar merit and distinct academic results in 2019.
- 8th Startup Braga Acceleration Program | 2023 | OmniumAI
  Direct involvement as a senior software engineer at OmniumAI.

Output:

- Scientific Paper | 2019 | Centre of Biological Engineering
  Cruz F, Lagoa D, Mendes J, Rocha I, Ferreira EC, Rocha M, Dias O. SamPler–a novel method for selecting parameters for gene functional annotation routines. BMC bioinformatics. 2019.
- Scientific Paper | 2019 | ITQB-UNL
  Pereira FC, Nunes F, **Cruz F**, Fernandes C, Isidro AL, Lousa D, Soares CM, Moran CP Jr, Henriques AO, Serrano M. A LysM Domain Intervenes in Sequential Protein-Protein and Protein-Peptidoglycan Interactions Important for Spore Coat Assembly in Bacillus subtilis. Journal of Bacteriology. 2019.
- Scientific Paper | 2020 | Centre of Biological Engineering
  Cruz F, Faria JP, Rocha M, Rocha I, Dias O. A review of methods for the reconstruction and analysis of integrated genome-scale models of metabolism and regulation. Biochemical Society Transactions. 2020.
- Scientific Paper | 2021 | Centre of Biological Engineering
  Pereira P, **Cruz F**, Rocha M. MEWpy: a computational strain optimization workbench in Python. Bioinformatics. 2021.
- Scientific Paper | 2022 | Centre of Biological Engineering
  Capela J, Lagoa D, Rodrigues R, Cunha E, **Cruz F**, Barbosa A, Bastos J, Lima D, Ferreira EC, Rocha M, Dias O. merlin, an improved framework for the reconstruction of high-quality genome-scale metabolic models. Nucleic Acids Research. 2022.