Tahila Andrighetti

Bioinformatician | Biological Data Analyst

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VISIT MY PORTFOLIO FOR PROJECT DETAILS : www.tahila.work/

ABOUT

Bioinformatician with experience in **mining**, **integrating**, **managing**, and **analyzing biological** and **health data**. Specialist in **developing analysis pipelines** using **Python** and R in a Linux environment. I have proven experience in projects within the agronomic and health sectors, where I have exposed to **machine learning** and **statistical analysis**. During my PhD, I developed advanced skills in **data communication** and **visualization**, **problem-solving**, and **analytical thinking**, as well as proficiency in English. I am currently enhancing my skills in **SQL**, **Power BI**, **Git**, and **machine learning** through specialized courses.

Seeking opportunities to apply and expand my bioinformatics skills in innovative settings.

EXPERIENCE

ARBOR BIO DECOR — **Caxias do Sul - Brazil**

CEO — AUGUST 2022 - FEBRUARY 2024

- Directed project management, sales, and marketing initiatives as CEO of Arbor Bio Decor, an artisanal décor factory
- Enhanced problem-solving, leadership, and communication skills crucial for team success
- Utilized entrepreneurial experience to foster innovation and adaptability in a dynamic environment

EMBRAPA AGROENERGY — **Brasília – Brazil (remote)**

Bioinformatician — SEPTEMBER 2020 - APRIL 2022

- Participated in a research project in collaboration with industry aimed at developing an ecological biopesticide against weeds based on RNA interference (RNAi). As a bioinformatician, my role involved identifying ideal lethal genes to be targeted by the technology according to pre-established criteria. To achieve this:
  - mined and curated data from various sources and different plant species, ensuring their integrity and scientific rigor, overcoming challenges of data scarcity and lack of information on appropriate protocols
  - developed pipelines and scripts in Python, Bash, and R for managing, analysing, and integrating extensive genetic datasets, resulting in a database of potential genes
  - analysed NGS datasets, including genomes and newly sequenced RNA-Seq data to evaluate quality and identify possible contamination.
- Facilitated executive decision-making through presentations of data conclusions, fostering interdisciplinary collaborations and providing essential insights in strategic meetings

EARLHAM INSTITUTE — **Norwich – United Kingdom**

Visiting Bioinformatician — MARCH 2017 – MAY 2020

Dr. Tamas Korcsmáros' Group

- **Project 1: MicrobioLink**
  - developed MicriobioLink: a comprehensive pipeline integrating diverse biological datasets to analyze the influence of bacterial proteins on the signaling pathways of their hosts, demonstrating expertise in bioinformatics workflow development
  - acquired, integrated, and managed diverse large data sets, employing Python and Bash for pipeline implementation and manipulation of big data, returning reports with the conclusions
  - enhanced technical skills in data mining, management, and analysis, including techniques such as protein-protein interaction and systems biology, which are critical for microbial genomics and NGS data analysis
  - published at https://doi.org/10.3390/cells9051278 and https://github.com/TAndrighetti/HMIpipeline

- **Project 2: Crohn's Disease Microbiome Analysis**
    - investigated the molecular mechanisms underlying Crohn's disease (CD) through computational analysis of metaproteomic datasets from a cohort study
    - developed a host-microbiome interaction network that showed the molecular signals and pathways affected by the interaction between microbial and human receptor proteins
    - modelled the propagation of these signals towards cellular nucleus, focusing on autophagy genes crucial in CD pathogenesis
    - identified different cellular processes associated with autophagy in CD compared to healthy conditions, including mitophagy, apoptosis, cellular differentiation, and cellular proliferation
    - published at https://doi.org/10.1016/j.isci.2022.103963

- Acquired experience and interpersonal skills in a collaborative, interdisciplinary, and high-standard research environment, refining teamwork competencies and broadening global perspectives
- Demonstrated proficiency in English communication, enabling documentation, presentations, and collaboration with international teams

STATE OF SÃO PAULO UNINVERSITY (UNESP) **Botucatu – Brazil**

Bioinformatics scientist FEBRUARY 2013 – JULY 2019

- I prepared detailed reports and wrote scientific articles to communicate the findings resulting from the conducted data analyses

- **Project: Sequence features evaluation for taxonomic analysis of metagenomes using Machine Learning**
    - used Support Vector Machine (SVM) learning to perform taxonomic classifications of reported and unknown metagenomic DNA reads
    - employed SVM inputs such as GC content, di-, tri-, and tetra-nucleotide entropy, frequencies of di-, tri-, and tetra-nucleotides (2, 3, and 4-mers), dinucleotide abundance, and TETRA in Python and Wolfram language
    - demonstrated the potential of sequence features to characterize sequences from incompletely sequenced organisms and assess taxonomic composition in diverse environments

EDUCATION

STATE OF SÃO PAULO UNIVERSITY (UNESP) **Botucatu - Brazil**

Doctor of philosophy (PH.D.) - Genetics MARCH 2015 - JULY 2019

- Presentation of research work at symposiums and international conferences, both in oral and poster formats, including a "Best Oral Presentation" award (data communication and visualization skills)
- **Scholarships:** CNPq PhD, PDSE CAPES international mobility and US Army travel scholarship
- Publication of 1 scientific article, and participation in 2

STATE OF SÃO PAULO UNIVERSITY (UNESP) **Botucatu - Brazil**

Master's Degree - Genetics FEBRUARY 2013 - FEBRUARY 2015

- Presentation of research work at symposiums and international conferences, both in oral and poster formats, including a "Best Poster Presentation" award (data communication and visualization skills)
- Pursued with FAPESP Scholarship

UNIVERSITY OF CAXIAS DO SUL **Caxias do Sul - Brazil**

Bachelor's Degree – Biological Sciences FEBRUARY 2008 - DECEMBER 2012

- Presentation of research work at symposiums and international conferences, both in oral and poster formats, including a "Best Oral Presentation" award (data communication and visualization skills)
- 3 Undergraduate researcher scholarships - 4 undergraduate research projects on bioinformatics, participation in the publication of 2 scientific articles

LANGUAGES

Portuguese (native); **English** (Pre-advanced); **Italian** (Intermediate); **Spanish** (Pre-Intermediate)

ADDITIONAL INFORMATION

- Availability for moving abroad (Italian citizenship application in progress)
- Relevant certifications:
  - **Python Data Analytics** - 64h – DIO Platform – May 2024
  - **Data Analysis and Visualization with Power BI** – 8h - DIO Platform – May 2024
  - **Data Analysis with SQL** – 12h - DIO Platform – Apr 2024
  - **Version Control with Git and GitHub** – 2h - DIO Platform – Mar 2024
  - **R Script Applied to Bioinformatics** – 21h - CRABI RP - Mar 2018
  - **Introduction to Python and Bioinformatics** – taught by me – UNESP - Feb 2014

  - **IBM Data Science Professional Certificate - ongoing**

- Hobbies: dance training (solo and group choreography), handcrafting and sewing

SKILLS AND KEYWORDS

Python (advanced)

R Script (intermediate)

Linux (intermediate)

Pipeline development (advanced)

Database construction (basic)

Machine learning (basic)

Git/GitHub (basic)

SQL (basic)

Data Management

Data Analysis

Data Mining

Bioinformatics

Organizational Behavior

Teamworking

Independency

Project management

Fast learning

Communication

Data visualization

Scientific writing

Problem-solving mindset