

# Mateus FERREIRA

Data Scientist | Back-End Developer | Python Developer | Computer Vision Developer | Machine Learning

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Curitiba, PR - Brazil

I am an undergraduate student in Biomedical Informatics, which is a computer science-based program with an emphasis on the application of technology and computational methods to develop solutions in health and biology areas.

I would describe myself as a passionate developer interested in technology applications to generate social and environmental impacts. Thereby, my areas of interest include computer vision technology applications – to manage smart cities, agriculture, and robotics – and the data science field applied to the decision-making processes by companies and governments.

## FORMATION

2017 - Now **Bachelor in Biomedical Informatics**, at Universidade Federal do Paraná (UFPR), in Informatics Department.

## EXPERIENCE




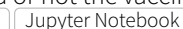








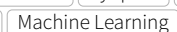
August 2022 **Development Analyst, TELESUL,**  
May 2022 Development of a PABX portal for users to make changes to their own phones.

March 2022 **Data Scientist, PARANÁ STATE HEALTH DEPARTMENT,**  
November 2020 Development of an automated system for capturing, analyzing, and processing data to build a COVID-19 Epidemiological Report that the Paraná State Health Department daily publishes **here**, and that system has reduced from 6 hours to 20 minutes the publication Report time.

The main developed activities were:

- > migration from a Microsoft Excel and Access-based workflow to an automated Python-based system;
- > crossing several different Health Databases, some with more than 40 million records, data normalization, and standardization to generate relevant information in the COVID-19 context for the entire state. To achieve this, I used Python and the most common libraries for data manipulation;
- > distribution strategies definition of more than 10 million COVID-19 tests to the entire State of Paraná, based on data of new cases and tests positivity index per city and machine learning and time series;
- > I have participated in a study that linked positive laboratory samples for the virus and patients who had either received or not the vaccine for COVID-19.

November 2020 **Research Intern, LIGH - LABORATORY OF IMMUNOGENETICS AND HISTOCOMPATIBILITY,**  
August 2019 Development of a system to analyze and characterize genetic sequences from bone marrow donors from the entire State of Paraná. The comparison between all the sequences in the sample set is performed in a few seconds.

## SKILLS

Programming	Python , Java (JEE) , C/C++ , R, JavaScript , HTML5 , CSS, Go , Angular, SQL, Shell/Batch Script, Assembly.
Frameworks and Libraries	OpenCV, OpenMP, OpenMPI, Pandas, Plotly, scikit-learn, Keras, TensorFlow, Django, Flask, Node.js, Spring, Hibernate.
Databases	MySQL, PostgreSQL, NoSQL, MongoDB.
Development Tools	Visual Studio Code, Git, Heroku, Docker, Metabase, Microsoft Power BI, Apache Spark.
Operating Systems and Cloud	Windows, Linux, AWS.
Office Automation	LaTeX, Office Pack(Word, Excel, PowerPoint);
Project Management	Kanban, SCRUM.

## LANGUAGES

Portuguese ● ● ● ● ●  
English ● ● ● ● ○  
Spanish ● ● ○ ○ ○

## + SOFT SKILLS

- > Communication;
- > Collaboration;
- > Creativity;
- > Empathy.

## PROJECTS

### CARIES CLASSIFICATION, VRI - VISION, ROBOTICS AND IMAGING

2022 - NOW

I am currently working on a final undergraduate project about caries level classification in dental images.

### CODE OPTIMIZATION, HIPES - HIGH PERFORMANCE AND EFFICIENT SYSTEMS

2020 - 2021

 [github.com/mateus-fecassio/HiPES](https://github.com/mateus-fecassio/HiPES)  [Article for ERAD 2021](#)

C code vectorization techniques, predication, and non-temporal loads in real applications Performance Study. The goal was to measure the impact of these code optimization techniques on real application models and write an article about obtained results.

C Matplotlib Optimization Vectorization Performance Testing Article Writing Modeling

## PUBLICATIONS

### ANÁLISE DE DESEMPENHO DAS TÉCNICAS DE VETORIZAÇÃO, PREDICAÇÃO E LOADS NÃO TEMPORAIS EM PROCESSADORES SKYLAKE 2021





 [Article for ERAD 2021](#)

This paper evaluates three code optimization techniques' time performances. Although the instruction vectorization and predication techniques show a reduction in this time in each proposed benchmark, the non-temporal load technique, as not expected, had a lower performance when compared to the proposed base model.

Optimization Vectorization Performance Testing Modeling

## CERTIFICATIONS

All my certifications are available [here](#).

- >  C2 English Level - EF SET Certificate;
- >  Introduction to CUDA Programming;
- >  Introduction to Advanced CUDA Programming;
- >  Introduction to MPI Programming.