Giuliano Netto Flores Cruz

Bioinformatician, Pharm. D.
Birth date: 02/17/1994

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EXPERIENCE

BiomeHub, Florianopolis (Brazil) - *Bioinformatician*

SET 2019 - PRESENT

Focus on hospital environments and human health; Research focused on developing statistical models to estimate (bacterial) sample colony-forming units from NGS data.

Neoprospecta, Florianopolis (Brazil) - *Bioinformatician*

JUN 2018 - AUG 2019

Develop, implement, and maintain bioinformatics pipelines related to microbiome data analysis; Microbiome data analysis consultancy for academia; Microbiome research with focus on hospital infection control.

Immunology Lab (School of Pharmacy - Federal University of Rio Grande do Sul), Porto Alegre (Brazil) - *Research and Teaching Assistant*

JAN 2016 - MAY 2018

TA for Immunology, Clinical Immunology, and Immunodiagnostics. Research on idiopathic pulmonary fibrosis using gene expression data.

Rohwer Lab (San Diego State University), San Diego (CA) - *Research Assistant*

MAY 2015 - AUG 2015

Development of laboratory protocols for phage stock preparation. Internship as part of *Science without Borders* program.

EDUCATION

MIT, Boston (MA) - *Micromasters in Statistics and Data Science*

MAY 2019 - OUT 2020 (expected)

Delivered online by MIT faculty through EdX platform. Comprising four advanced, in-depth courses on probability theory, statistics, machine learning, and data analysis - plus a capstone proctored exam for each.

Federal University of Rio Grande do Sul (UFRGS), Porto Alegre (Brazil) - *Pharmacy Degree*

FEB 2012 - DEC 2018

SKILLS

R (++++)

- Bioconductor
- Tidyverse
- RMarkdown
- Brms

Python (+++)

- Numpy & Pandas
- Plotnine & Matplotlib
- Pytorch
- Numerical computing

Web development (+++)

- Django
- HTML & CSS
- Bootstrap

Bayesian[1] and classical statistical modeling for inference and prediction

Interactive visualization & reporting

Data types and wet lab:

* Superscripts index related publications.

- Microbiome[1,5]
- Cell image[2]
- Gene expression[3]
- Immunology[3] & Microbiology[4]

General programming:

- Shell script
- Version control
- PostgreSQL
- BigQuery
- Object-oriented programming
- Jupyter Notebook

June, 2020

AWARDS

Concord University, Athens (WV) - *Science without Borders*

JUL 2014 - MAY 2015

Study abroad as part of Brazilian Scientific Mobility Program.

COMPLEMENTARY EDUCATION

Harvard University, Cambridge (MA) - *Data Analysis for the Life Sciences Professional Certificate*

FEB 2018 - JUL 2018

Delivered online by Harvard faculty through EdX platform. Comprising four intermediate to advanced level courses on statistical computing, modeling of high-throughput experiments, and high-dimensional data analysis.

LANGUAGES

Brazilian Portuguese (native)

English (proficient)

SOFT SKILLS

Multidisciplinary collaboration

Teaching

Enthusiasm

Responsibility

SELECTED PUBLICATIONS

* Indices relate to superscripts from the skills section (*data types and wet lab*). See complete list at Google Scholar.

1) **Cruz GNF** ǂ, Christoff AP ǂ, Oliveira LFV. 2020. "Equivolumetric protocol generates library sizes proportional to total microbial load in next-generation sequencing". *BioRxiv*. https://doi.org/10.1101/2020.02.03.932301

2) Lopes W ǂ, **Cruz GNF** ǂ, Rodrigues ML, Vainstein MH, Kmetzsch L, Staats CC, Vainstein MH, Schrank A. 2020. "Scanning electron microscopy and machine learning reveal heterogeneity in capsular morphotypes of the human pathogen Cryptococcus spp.". *Scientific Reports.* https://doi.org/10.1038/s41598-020-59276-w

3) **Cruz GNF.** 2018. "Genomic analysis of macrophage gene signatures during idiopathic pulmonary fibrosis development". *UFRGS*. Final undergraduate monograph. http://hdl.handle.net/10183/195681

4) Bonilla N, Rojas MI, **Cruz GNF**, Hung S, Rohwer F, Barr JJ. 2016. "Phage on tap–a quick and efficient protocol for the preparation of bacteriophage laboratory stocks". *PeerJ*. https://doi.org/10.7717/peerj.2261

5) Christoff AP, Sereia AFR, **Cruz GNF**, et al. 2020. "One year cross-sectional study in adult and neonatal intensive care units reveals the bacterial and antimicrobial resistance genes profiles in patients and hospital surfaces". *Plos One*. https://doi.org/10.1371/journal.pone.0234127

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REFERENCES

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