

Lucca Nielsen

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ABOUT ME

Leveraging my expertise in data analysis techniques, geotechnologies, and epidemiology, I am dedicated to devising innovative solutions in the field of Public Health.

EDUCATION AND TRAINING

Public Health Bachelor's Degree

University of São Paulo (USP) [28/12/2018 – 31/01/2023]

Address: 01246-904 São Paulo (Brazil)

Website: <https://www.fsp.usp.br/site/>

Field(s) of study: Public Health | Health and welfare

Final grade: 9.3/10 – Level in EQF: EQF level 6

LANGUAGE SKILLS

Mother tongue(s): **Portuguese**

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

WORK EXPERIENCE

Data analyst

Instituto Cidades Sustentáveis [01/03/2023 – Current]

Country: Brazil

Business or sector: Human health and social work activities

Link: <https://idsc.cidadessustentaveis.org.br/>

Technical support in the development, analysis, and monitoring of indicators related to the sustainable development goals advocated by the United Nations. Working at the local, regional, and national levels.

R instructor assistant

Applied Epi [28/02/2023 – Current]

Country: United States

Website: <https://appliedepi.org/>

Assist in the delivery of comprehensive synchronous courses.

Data analyst

Centro de Vigilância Epidemiológica "Prof. Alexandre Vranjac" [22/01/2021 – 01/02/2023]

Address: Av. Dr. Arnaldo, 351 Sixth floor, Room 501, 01246-000 São Paulo (Brazil)

Website: <https://www.saude.sp.gov.br/cve-centro-de-vigilancia-epidemiologica-prof.-alexandre-vranjac/>

Email address: dvresp@saude.sp.gov.br

Name of unit or department: Respiratory Transmitted Disease Division - **Business or sector:** Human health and social work activities

Link: <https://www.scielo.br/j/rbepid/a/scMYQN96Dx5nJzNmRrDFYTM/?lang=en>

I work at the Epidemiological Surveillance Center, helping with task routines of Respiratory Infectious Diseases, mainly in processes within the scope of Severe Acute Respiratory Syndrome (SARS), [Multisystem Inflammatory Syndrome in Children](#) (MIS-C), and Influenza.

- Evaluation of the influenza sentinel surveillance system
- Developing automated MIS-C epidemiological reports
- Perform and evaluate probabilistic linkages between different data sets
- Development and maintenance of scripts in R for data transformation and visualization.

Public Health Intern

Coordenação de Epidemiologia e Informação (CEINFO) / Secretária Municipal de Saúde (SMS) [23/02/2020 – 23/08/2021]

Address: R. General Jardim, 36 5º andar Vila Buarque, 01223-010 São Paulo (Brazil)

Website: https://www.prefeitura.sp.gov.br/cidade/secretarias/saude/epidemiologia_e_informacao/index.php?p=258529

Email address: smsceinfo@prefeitura.sp.gov.br

Name of unit or department: Geoprocessing and Socio-Environmental Information - **Business or sector:** Human health and social work activities

I completed an Internship Scholarship Program at the Coordination of Epidemiology and Information of the Municipal Secretary of Health of São Paulo. I was located in the Geoprocessing and Socio-Environmental Department and my main responsibilities were to organize and share demographic and environmental data with the other health departments, apply geotechnologies and spatial analysis techniques for multidisciplinary projects and produce printed and digital maps.

- Searching for high-risk clusters for specific diseases.
- Georeferencing cases, deaths, and other health-related events.
- Creating and analyzing data on Geographic Information Systems (GIS)

Survey assistant

Faculdade de Saúde Pública da Universidade de São Paulo [26/05/2020 – 24/12/2021]

Address: Av. Dr. Arnaldo, 715, 01246-904 São Paulo (Brazil)

Website: <https://www.fsp.usp.br/site/>

Name of unit or department: COVID-19 Program: Inequality and Vulnerability - **Business or sector:** Education

Assisted data survey activities in the research project: Air pollution in São Paulo: correlation between pollution in São Paulo with hospitalizations and deaths in patients with COVID-19 with heart disease or with respiratory diseases.

The project was presented at the International Planetary Health Congress - USP 2021 in the format of a Poster.

DIGITAL SKILLS

R / SQL / Stata / ArcGIS / QGIS / SaTScan / GeoDa / Microsoft Excel / Python / SPSS / Git / Microsoft Office / CSS

PROJECTS

Dashboard - Standardized mortality rate in Brazil

I created a dashboard using Shiny, leaflet and other R packages.

The dashboard offers an interactive visualization of the spatial distribution in the Federative Units of Brazil of the mortality rates standardized by sex and age group, according to the basic causes grouped in the chapters of the ICD-10. To learn more about the build process, click on the 'README' tab of the panel. To create a specific map: Select a year, rate type (standardized or crude), and the ICD-10 chapter of interest.

Links: https://6c6yvn-lucca0nielsen.shinyapps.io/StandardizedMortality_Brazil/ | https://github.com/Luccan97/StandardizedMortality_Brazil

Website - (in)visible territories and Sanitation in the Brazilian Legal Amazon

[01/02/2022 – 01/06/2022]

This is the final product of a study carried out by undergraduates in Public Health at the Faculty of Public Health of the University of São Paulo - FSP/USP as part of the discipline Strategies and actions of socio-environmental interventions II. The general objective is to identify, through secondary data, municipalities and/or regions in the Brazilian Legal Amazon presenting characteristics of vulnerability and risk regarding sanitation conditions.

Link: <https://sites.google.com/usp.br/territorios-invisveis/o-projeto?authuser=0>

PUBLICATIONS

[COVID-19 in the state of São Paulo: the evolution of a pandemic](#)

[2021]

Objectives:

To retrospectively describe severe cases of hospitalized patients and deaths related to the COVID-19 epidemic in the state of São Paulo, starting from the date of the first record, with symptoms onset on 02/10/2020 up to 05/20/2021.

Keywords:

SARS-CoV-2; Epidemics; Health strategies; Epidemiologic surveillance services

[Spatial, spatio-temporal, and origin-destination flow analyses of patients with severe acute respiratory syndrome hospitalized for COVID-19 in Southeastern Brazil, 2020-2021](#)

[2021]

This study aimed to identify clusters of incidence and mortality of hospitalized patients with severe acute respiratory syndrome for COVID-19 in the SPS, in 2020–2021, and describe the origin flow pattern of the cases. Cases and mortality risk area clusters were identified through different analyses (spatial clusters, spatio-temporal clusters, and spatial variation in temporal trends) by weighting areas. Ripley's K12-function verified the spatial dependence between the cases and infrastructure. There were 517,935 reported cases, with 152,128 cases resulting in death. Of the 470,441 patients hospitalized and residing in the SPS, 357,526 remained in the original municipality, while 112,915 did not. Cases and death clusters were identified in the São Paulo metropolitan region (SPMR) and Baixada Santista region in the first study period, and in the SPMR and the Campinas, São José do Rio Preto, Barretos, and Sorocaba municipalities during the second period. We highlight the priority areas for control and surveillance actions for COVID-19, which could lead to better outcomes in future outbreaks.

Keywords: SARS-CoV-2 infection, Pandemics, Virus, SaTScan, Spatial analysis, COVID-19

HONOURS AND AWARDS

01st Place in the poster category

General Coordination of Surveillance of the Flu syndromes [04/11/2022]

The work entitled "DYNAMIC MONITORING AND SPATIAL-TEMPORAL EVALUATION OF COVID-19 IN THE STATE OF SÃO PAULO: SPATIAL SCANNING TECHNIQUES FOR IDENTIFICATION OF EPIDEMIC RISK AREAS" was awarded as 01st Place in the poster category, at the Station Scientific Committee of the National Meeting on Flu Syndromes and Evaluation of the Surveillance Response for the Covid-19 Pandemic in Brazil, carried out by the General Coordination of Surveillance of the Flu syndromes from November 07 to 09, 2022. Write here the description...