

## Vinicius Perin

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## EDUCATION

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### Ph.D. in Geospatial Analytics

August 2019 - Current

North Carolina State University

Dissertation topic: Large-scale on-farm reservoirs monitoring using remote sensing techniques

GPA: 3.90/4.0

### Master of Science in Agronomy

May 2017 - May 2019

Kansas State University

Thesis: "Ammonia volatilization from urea broadcast on winter wheat".

GPA: 4.0/4.0

### Undergraduate Exchange

Aug 2015 - Aug 2016

Wageningen University and Research Centrum (WUR)

Tuition and fees fully sponsored by WUR and University of Sao Paulo partnership.

GPA: 7.3/10

### Bachelor of Science in Agronomy

Feb 2012 - Dec 2016

University of Sao Paulo

Thesis: "Potential of sugarcane irrigation on northwestern Sao Paulo, Brazil".

GPA: 7.0/10

## RESEARCH EXPERIENCE

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### Ph.D. in Geospatial Analytics

North Carolina State University, Raleigh NC

August 2019 - Current

*Graduate Research Assistant*

- Pre-processing and processing Landsat-8 and Sentinel-2 imagery using open-source software (R, Python and QGIS)
- Creating an automated workflow to process and analyze Analysis Ready Data – Surface Water Extent
- Time-series analysis of surface change using Google Earth Engine and machine learning algorithms
- Processing, downloading and analyzing high-resolution Planet CubeSats imagery using Planet's Python Client API
- Courses focused on Data Mining, Spatial Modeling, Geo-visualization and Geo-database management

### MSc Thesis

Kansas State University, Manhattan KS

May 2017 - May 2019

#### *Graduate Research Assistant*

- Coordinated the planning and execution of 11 research sites. Activities ranged from planting to harvest winter wheat and deployment of meteorological stations.
- Responsible for creating a Python based function to manipulate, clean and analyze field experimental data
- Manipulation of MATLAB functions to help during the data mining process
- Comprehension of the Integrated Horizontal Flux (IHF) micrometeorological method combined with a passive sampler to measure gas fluxes
- Courses focused on Ag meteorology, Remote Sensing and GIS, Statistics and Programming (Python)

#### **Undergraduate thesis**

**University of Sao Paulo, Piracicaba Brazil**

Feb. 2012 – Dec. 2016

#### *Undergraduate student*

- Collection, cleaning and analysis of a 33-year time series dataset, with daily resolution for 28 meteorological stations
- Application of Penman-Monteith equations to calculate sugarcane crop evapotranspiration
- Use of R and Excel-based functions to calculate sugarcane water requirement using Thornthwaite and Mather method.
- Manipulation of SRTM (Shuttle Radar Topography Mission) datasets
- Use of hydrological models to calculate water surface availability

#### **RELEVANT SKILLS**

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-Languages: fluent English and native Portuguese

-Software: QGIS, ArcGIS, ENVI, MATLAB and R

-Programming languages: Python, R, JavaScript and MATLAB

-Experiences in Python using: NumPy, Pandas, Matplotlib, JupyterLab, Jupyter Notebooks, Scikit-learn (Random Forest and PCA algorithms)

-Experiences in R using: Data.table, dplyr, raster, rgdal and rgeos

-Experiences in working Git and Gdal functions

#### **ACHIEVEMENTS AND AWARDS**

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-Earth Surface Processes Institute (ESPI), Summer School. 6-day immersive online python programming training. 2020.

-Mindvalley University - The Habit of Ferocity by Steven Kotler. Full quest granted via Scholarship Program. 2020.

- Poster Presentation Winner. College of Natural Resources at North Carolina State University. 2020.
- Scholarship Agronomy Department for distinguished graduate students. Kansas State University 2018.
- Travel Award scholarship. Kansas State University. 2018.
- Finalist Three Minutes Presentations. Kansas State University 2018.
- Scholarship Agronomy Department for distinguished graduate students. Kansas State University 2017.

## PEER- REVIEWED PUBLICATIONS

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**Perin, V.**, Tulbure G., M., Gaines D., M., Reba L., M. & Yaeger., M. On-farm reservoir monitoring using Landsat inundation datasets. Under Rev. - Agriculture Water Management.

**Perin, V.**, Santos, E.A., Lollato, R., and Ruiz-Diaz, D. Assessment of the Denitrification-Decomposition (DNDC) model simulations of ammonia volatilization from broadcast urea. (Nut. Cycling in Agroecosystem In prep.)

**Perin, V**, Santos, EA, Lollato, R, Ruiz-Diaz, D, Kluitenberg, GJ. Impacts of ammonia volatilization from broadcast urea on winter wheat production. Agronomy Journal. 2020; 1– 15. <https://doi.org/10.1002/agj2.20371>

**Perin, V.**, Sentelhas, P. C., Dias, H. B., & Santos, E. A. (2019). Sugarcane irrigation potential in Northwestern São Paulo, Brazil, by integrating Agrometeorological and GIS tools. Agricultural water management. <https://doi.org/10.1016/j.agwat.2019.04.012>

Lollato, RP, Bavia, GP, **Perin, V**, et al. Climate-risk assessment for winter wheat using long-term weather data. Agronomy Journal. 2020; 112: 2132– 2151. <https://doi.org/10.1002/agj2.20168>

## PROFESSIONAL MEETINGS

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Perin, V., Santos, E.A., Lollato, R., and Ruiz-Diaz, D. 2018. Ammonia volatilization from urea broadcast on winter wheat. In: 33<sup>rd</sup> Conference on Agricultural and Forest Meteorology. May 2018. Boise, ID. Poster.

Perin, V., Coelho, R.D. 2015. Sugarcane canopy temperature for different varieties and different water stress conditions. In: University of Sao Paulo Scientific Symposium. July 2015. Sao Paulo, Brazil. Oral Presentation.

Perin, V., Coelho, R.D. 2014. Sugarcane canopy temperature for different varieties and different water stress conditions. In: University of Sao Paulo Scientific Symposium. July 2014. Sao Paulo, Brazil. Poster.