

# Erone Ghizoni dos Santos

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## Academic qualification

<b>2024 -</b>	Postdoctoral Fellow Jet Propulsion Laboratory, Caltech
<b>2020 - 2024</b>	PhD in Geosciences <b>Title:</b> From Canopy to climate: The effects of human-induced disturbances on structure and microclimate of tropical forests in Southeast Asia University of Helsinki
<b>2022 - 2022</b>	Researcher Visitor University of Hong Kong, Hong Kong – Hong Kong SAR
<b>2016 - 2018</b>	Master's in Remote Sensing <b>Title:</b> Forest biomass estimation to Amazon biome in Mato Grosso state using field, LiDAR and orbital image data in multi-stage approach National Institute for Space Research, INPE, São Jose Dos Campos, Brazil Scholarship from: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – CAPES
<b>2009 - 2014</b>	Graduation in Forest Engineering University State of Santa Catarina, Brazil
<b>2013 - 2014</b>	Vocational and Technical Education in Business. Centro de Educação Profissional Renato Ramos da Silva, CEDUP, Brazil

## Complementary qualification

<b>2022 -2022</b>	Earth Observation Remote Sensing Workshop 2022 European Space Agency, ESA, Belgium
<b>2017 - 2017</b>	Short Term Course: Modelling biomass using LiDAR National Institute for Space Research, INPE, São José Dos Campos, Brazil
<b>2016 - 2016</b>	Short Term Course: Training in LiDAR data processing Instituto de Pesquisas e Estudos Florestais, IPEF, Piracicaba, Brazil
<b>2015 - 2015</b>	Short Term Course: Forest management training Serviço Nacional de Aprendizagem Rural de Mato Grosso, SENAR-MT, Cuiabá, Brazil
<b>2014 - 2014</b>	Short Term Course: National Rural Environmental Register (CAR) University Federal of Lavras, UFLA, Lavras, Brazil
<b>2011 - 2011</b>	Short Term Course: ArcGIS University State of Santa Catarina, UDESC, Florianópolis, Brazil
<b>2011 - 2011</b>	Short Term Course: Environmental Technical Forensic University State of Santa Catarina, UDESC, Florianópolis, Brazil
<b>2010 - 2010</b>	Short Term Course: Renewable Energy

## Professional Experience

### 1. University of Helsinki

**2020 - Actual**      **Position: PhD Researcher, 37.5h/week**  
**Teaching Assistant in Remote Sensing, 72h/year**  
• Assistance in exercise lessons and co-supervision of Remote Sensing practical projects.  
**Master's thesis Co-supervisor**

### 2. University of Leicester

**2019 - 2020**      **Position: Research Assistant, Working hours (weekly): 20.**

### 3. National Institute for Space Research – INPE

**2016 - 2018**      **Position: Master Researcher, 40h/week.**

### 4. Self Employed

**2015 - 2016**      **Position: Forestry Consultant**

### 5. Esteio Engenharia e Aerolevantamentos Sa – ESTEIO

**2014 - 2014**      **Position: Internship**

### 6. Estación Experimental Agropecuaria Concordia – INTA, Argentina

**2013 - 2013**      **Position: Internship**

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## Projects

**2016 - 2018**      Mapping and monitoring of forest degradation using remote sensing data with medium and moderate spatial resolution  
Sponsor: Fundação de Amparo à Pesquisa do Estado de São Paulo – FAPESP  
Members: Erone Ghizoni dos Santos, Yosio Edemir Shimabukuro (PI), Egidio Arai, Francielle da Silva Cardozo, Gabriel Pereira, Liana Oighenstein Anderson, Luiz Eduardo Oliveira e Cruz de Aragão, Valdete Duarte, Anderson Jorge, Kaio Allan Cruz Gasparini, Paula Resende Santos, Thais Michele Rosan

**2013 - 2014**      Dendrochronology, climate variation and historical use of *Araucaria angustifolia* in the state of Santa Catarina.  
Sponsor: University State of Santa Catarina  
Members: Erone Ghizoni dos Santos, André Felipe Hess (PI), Myrcia Minatti, Pollyni Ricken, Gabriel Teixeira da Rosa, Gedree Adriano Borsoi

**2012 - 2014**      Evaluation of the growth and commercial production of *Pinus taeda* in different thinning intensities  
Sponsor: University State of Santa Catarina

Members: Erone Ghizoni dos Santos, André Felipe Hess (PI), Myrcia Minatti, Gabriel Teixeira da Rosa, Raul Silvestre, Jackson Vidaletti Gabriel

**2013 - 2013** Using organic waste to build vegetable garden through composting technique Extension Project University State of Santa Catarina  
Members: Erone Ghizoni dos Santos, Germano Gütter (PI), João Adriano Ribeiro, Bruno Nascimento

**2011 - 2011** Soil Laboratory - LAS/CAV  
Extension Project University State of Santa Catarina  
Members: Erone Ghizoni dos Santos, Mari Lúcia Campo (PI), Henrique Germano

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## Funding

**2020 - 2024** Salaried position of University of Helsinki Research Foundation  
Total:  $\cong$  € 115,000.00

**2022 - 2022** Travel Grant for conference presentation  
Total: € 900.00

**2022 - 2022** Travel Grant for international research visiting in Hong Kong University  
Total: € 1,500.00

**2016 - 2018** Master's Scholarship  
Total: BRL 36,000.00

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## Bibliographic Production

### Articles Peer-reviewed

1. **SANTOS, E. G.**; ISMAEEL, A.; HEVEAKORE, M.; ALTMAN J.; DOLEŽAL J; SAM K.; KOPECKÝ, M.; SVÁTEK, M.; SENIOR, R.; MATULA, R.; PLICHTA, R.; ESTOQUE, R. MAEDA, E. E. Mapping thermal microrefugia in Southeast Asia: the new critical areas to mitigate the effect of global warming on tropical forests microclimate. *Environmental Research Letters*, 2024 (submitted)
2. **SANTOS, E. G.**; SVÁTEK, M.; NUNES, M. H.; AALTO, J.; SENIOR, R.; MATULA, R.; PLICHTA, R.; MAEDA, E. E. The impacts of canopy structural traits under varying disturbance levels on tropical forest microclimates. *Agricultural and Forest Meteorology*, 2024
3. ISMAEEL, A.; Tai A.; DOLEZAL, J.; LEMBRECHTS, J.; CAMARGO, J. L.; NASCIMENTO, L.; AALTO, I.; SAM, K.; **SANTOS E. G.**; SVÁTEK, M.; NUNES, M. H.; AALTO, J.; MATULA, R.; PLICHTA, R.; ABERA, T.; MAEDA, E. Patterns of tropical forest understory temperatures. *Nature Communication*, 2024
4. JIA J.; HUGHES, A. C.; NUNES, M. H.; **SANTOS, E. G.**; PELLIKKA, P. K. E.; KALLIOVIRTA, L.; MWANG'OMBE, J.; MAEDA, E. E. Forest structural and microclimatic patterns across an elevational gradient in Mount Kenya. *Agricultural and Forest Meteorology*, 2023. (submitted)
5. **SANTOS, E. G.**; NUNES, M. H.; JACKSON, T.; MAEDA, E. E. Quantifying Tropical Forest Disturbances Using Canopy Structural Traits Derived from Terrestrial Laser Scanning. *Forest Ecology and Management*, 2022.

6. MOURA Y. M.; BALZTER H.; GALVÃO L.S.; DALAGNOL R.; ESPÍRITO-SANTO F.; **SANTOS, E. G.**; MARIANO GARCIA BISPO P. C.; OLIVEIRA R. C.; SHIMABUKURO, Y. E. Carbon Dynamics in a Human-Modified Tropical Forest: A Case Study Using Multi-Temporal LiDAR Data. *Remote Sensing*, 2020
7. **SANTOS, E. G.**; SHIMABUKURO, Y. E.; MOURA Y. M.; GONÇALVES F. G.; JORGE A.; GASPARINI, K.; ARAI E.; DUARTE, V.; OMETTO J. P. Multi-scale approach to estimate aboveground biomass in the Brazilian Amazon using Landsat and LiDAR data. *International Journal of Remote Sensing*, 2019.
8. SHIMABUKURO, Y. E.; ARAI E.; DUARTE, V.; JORGE A.; **SANTOS, E. G.**; GASPARINI, K.; DUTRA A. C. Monitoring Deforestation and Forest Degradation Using Multi-Temporal Fraction Images Derived from Landsat Sensor Data in the Brazilian Amazon. *IJRS - International Journal of Remote Sensing*, 2019.
9. SOARES, P. R. C.; OLIVEIRA, G. S.; SILVA J. P.; FERRARI, L. H.; **SANTOS, E. G.**; KANIESKI, M. R.; SAMPIETRO, J. A. Competitiveness of wood pulp in the international Market. *Australian Journal of Crop Science*, 2018.

#### Articles published in annals of events

1. **SANTOS, E. G.**; SHIMABUKURO, Y. E.; JORGE, A.; GASPARINI, K.; MOURA, Y. M.; ARAI, E.; DUARTE, V.; Estimativa de biomassa em floresta degradada na região central do Estado do Mato Grosso a partir de dados de Sensoriamento Remoto. In XIX Brazilian Symposium on Remote Sensing, 2019, Santos – SP.
2. DUTRA, A. C.; SHIMABUKURO, Y. E.; ARAI, E.; DUARTE, V.; GASPARINI, K. A. C.; **SANTOS, E. G.** Imagens fração derivadas das imagens PROBA-V para mapear o uso e cobertura da terra no Estado do Mato Grosso, 2019. In XIX Brazilian Symposium on Remote Sensing, 2019, Santos – SP.
3. **SANTOS, E. G.**; NEGRÃO, P.; SOTHE, C.; GERENTE, J.; MIGUEL, B.H.; Avaliação de Modelo Digital de Terreno (MDT) e declividade utilizando diferentes interpoladores a partir de dados LiDAR. In CBC Congresso Brasileiro de Cartografia, 2017.
4. **SANTOS, E. G.**; GERENTE, J.; NEGRÃO, P.; MIGUEL, B. H. Avaliação da regeneração natural em cicatrizes de movimentos de massa na serra do mar paranaense a partir de índices de vegetação. In CBC Congresso Brasileiro de Cartografia, 2017.
5. **SANTOS, E. G.**; SHIMABUKURO, Y. E.; ARAI E.; Duarte, V., JORGE A.; GASPARINI, K. Multi-stage approach to estimate forest biomass in degraded area by fire and selective logging. In AGU - American Geophysical Union, 2017.
6. SHIMABUKURO, Y. E.; ARAI E.; **SANTOS, E. G.**; JORGE, A. Monitoring deforestation and forest degradation using multi-temporal fraction images derived from Landsat TM data in the Brazilian Amazon. In IEEE International Geoscience and Remote Sensing Symposium, IGARSS 2017, Fort Worth, Texas, USA.
7. **SANTOS, E. G.**; JORGE, A.; SHIMABUKURO, Y. E.; GONCALVES, F. G. Estimativa de biomassa acima do solo para uma área queimada e uma área de corte seletivo no município de Feliz Natal - MT por meio de dados LiDAR In: XVIII Brazilian Symposium on Remote Sensing, 2017, Santos – SP.
8. JORGE, A.; **SANTOS, E. G.**; SHIMABUKURO, Y. E.; MOREIRA, M. A. Potencial das imagens Landsat – OLI e RapidEye para identificar áreas de degradação florestal em Querência e Canarana – MT comparadas com imagens LiDAR In: XVIII Brazilian Symposium on Remote Sensing, 2017, Santos – SP.
9. RICKEN, P.; MINATTI, M.; HESS, A. F.; **SANTOS, E.**; BOING FILHO, V. Dendrocronologia Aplicada ao Estudo da *Araucaria angustifolia* (Bert.) O. Kuntze em Povoamento natural no município de Lages, SC. In: International Workshop of Tropical Dendrochronology, 2013, Lavras, MG. International Workshop of Tropical Dendrochronology, 2013.

## Chapters published

1. SHIMABUKURO Y. E.; ARAI E.; **SANTOS E. G.**; CASSOL H. L. G.; SATO L. Y. Land Use Land Cover (LULC) Changes and Biomass Estimation in The Amazon Biome Using Multisensor Data. *Comprehensive Remote Sensing, Second edition Remote Sensing Applications 2023* (in prep.)
2. JORGE, A.; **SANTOS E. G.**; SHIMABUKURO, Y. E.; MOREIRA, M. A. Comparison of two different spatial resolutions orbital images and lidar to identify forest degraded areas. In: Estudos sobre Sensoriamento Remoto, Cartografia e Geoprocessamento – Volume 1, 2021. doi: 10.36229/978-65-5866-087-3.CAP.03.
3. MINATTI, M.; HESS, A. F.; RICKEN, P.; INKOTTE, J.; **SANTOS, E.** Ajuste de Relação H/D para *Araucaria angustifolia* no Planalto Catarinense - SC. In: Atualidades em Mensuração Florestal.1, 2014, v.1, p. 318-321. ISBN: 9788591735709

## Presentations in Events

1. **SANTOS, E. G.**; SVÁTEK M.; NUNES, M. H.; MAEDA, E. E., The influence of canopy structural traits on the understorey air temperature of tropical forests in Borneo, 2023. European Geosciences Union General Assembly. Vienna, Austria.
2. **SANTOS, E. G.**; SVÁTEK M.; NUNES, M. H.; AALTO, I.; MAJALAP, N.; MAEDA, E. E., Effects of Plant Area Index derived from Terrestrial Laser Scanning on microclimate temperature along a selective logging gradient in Borneo Forest, 2022. Microclimate Ecology & Biogeography Conference. Antwerp, Belgium.
3. DUTRA, A. C.; SHIMABUKURO, Y. E.; ARAI, E.; DUARTE, V.; GASPARINI, K.; **SANTOS, E. G.** Imagens fração derivadas das imagens PROBA-V para mapear o uso e cobertura da terra no Estado do Mato Grosso, 2019. XIX Brazilian Symposium on Remote Sensing. Santos, Brazil.
4. **SANTOS, E. G.**; SHIMABUKURO, Y. E.; ARAI E.; Duarte, V., JORGE A.; GASPARINI, K. Multi-stage approach to estimate forest biomass in degraded area by fire and selective logging. AGU - American Geophysical Union, 2017. New Orleans, Louisiana.
5. **SANTOS, E. G.**; JORGE, A.; SHIMABUKURO, Y. E.; GONCALVES, F. G. Estimativa de biomassa acima do solo para uma área queimada e uma área de corte seletivo no município de Feliz Natal - MT por meio de dados LiDAR, 2017. XVIII Brazilian Symposium on Remote Sensing. Santos, Brazil.
6. SHIMABUKURO, Y. E.; ARAI E.; **SANTOS, E. G.**; JORGE, A. Monitoring deforestation and forest degradation using multi-temporal fraction images derived from Landsat TM data in the Brazilian Amazon. In IEEE International Geoscience and Remote Sensing Symposium, IGARSS 2017. Fort Worth, USA.

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## Career breaks

**Apr. 2018 – Fev. 2019** Parental leave

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## Areas of Expertise

1. LiDAR
2. Forest Microclimate
3. Biomass and Carbon estimation
4. Remote Sensing

5. Forest Resources and Forest Engineering
6. Forest Management

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### **Referees**

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