

SERGIO MARCONI

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Website: https://marconis.github.io/data_science_ecology/

Education

University of Florida, Gainesville, FL, US Ph.D student in Interdisciplinary Ecology	Ongoing
University of Tuscia, Viterbo, Italy M.Sc. cum Laude in Forestry and Environmental Sciences	2014
University of Tuscia, Viterbo, Italy B.Sc. cum Laude in Forestry and Environmental Sciences	2010

Honors and Awards

1. University of Florida Biodiversity Institute fellowship;
2. US-Italy Fulbright fellowship Self Placed fellowship;
3. Master of Sciences with honors, Tuscia University;
4. Bachelor of Sciences with honors, Tuscia University;

Grants

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| 1. University of Florida Biodiversity Institute fellowship, \$20,000 ; | 2017/18 |
| 2. UF IFAS Travel Grant for Gordon Conference \$250 ; | 2016 |
| 3. US-Italy Fulbright Scholarship 2015/16 Award, \$31,000 ; | 2015/16 |
| 4. Michael Vinciguerra IIE Supplemental Grant, \$4,000 ; | 2015/16 |
| 5. Travel grant for AGU Fall Meeting, CMCC, 560€ ; | 2013 |
| 6. Short Term Scientific Mission grant, COST action, Karlsruhe Institute of Technology, IMK-IFU, 1,570€ ; | 2010 |
| 7. Forest Ecology Lab. Student fellowship, Tuscia University, 960 € ; | 2009 |
| 8. Information Systems and Inventories Lab. Student fellowship, Tuscia University, 960€ . | |

Professional Experience

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| 1. <u>Post Graduate fixed term contract, CMCC, ORIENTGATE, IAFENT,</u>
a. Development of a Forest Ecosystem Process Model (C/++)
b. Metanalysis of impacts of forest physical change on Climate | 2014 |
| 2. <u>Project related fixed term contract, Project ORIENTGATE, CMCC, IAFENT,</u>
a. Data analysis of structure of forests in Central Africa (Ghana) | 2013/14 |

Teaching experience

1. Graduate level workshops in scientific programming for UF Carpentries 2016/18
 - a. Instructor and helper to a number of workshops in R, Git, Shell, OpenRefine, Geospatial Ecology for the Carpentries Organization;
2. Graduate level workshop on Pattern Recognition and Spatial Ecology at the UFBI (website): 2018
 - a. Developed materials, Organized, and taught a Spatial Ecology workshop focusing on tree crown objects delineation and classification using hyperspectral and LiDAR data

Computer Skills

Programming Languages: R, Python, C/++, Bash, Matlab

Computational/statistical tools: Git, Stan, Keras, sklearn, lidR, gdal, postgis

Peer Reviewed Papers

Total citation count: 43;

h-index: 3

h-10: 2

1. **Marconi, S.**, Graves, S.J., Gong, D., Nia, M.S., Le Bras, M., Dorr, B.J., Fontana, P., Gearhart, J., Greenberg, C., Harris, D.J. and Kumar, S.A., ..., Wang DZ., In press. *A data science challenge for converting airborne remote sensing data into ecological information*. PeerJ.
2. **Marconi, S.**, Chiti, T., Nolè, A., Valentini, R. and Collalti, A., 2017. *The role of respiration in estimation of net carbon cycle: coupling soil carbon dynamics and canopy turnover in a novel version of 3D-CMCC forest ecosystem model*. *Forests*, 8(6), p.220.
3. Perugini, Lucia, Luca Caporaso, **Sergio Marconi**, Alessandro Cescatti, Benjamin Quesada, Nathalie de Noblet-Ducoudre, Johanna I. House, and Almut Arneth. "Biophysical effects on temperature and precipitation due to land cover change." *Environmental Research Letters* 12, no. 5 (2017): 053002.
4. Collalti, A., **Marconi, S.**, Ibrom, A., Trotta, C., Anav, A., D'andrea, E., Matteucci, G., Montagnani, L., Gielen, B., Mammarella, I. and Grünwald, T., 2016. *Validation of 3D-CMCC Forest Ecosystem Model (v. 5.1) against eddy covariance data for 10 European forest sites*. *Geoscientific Model Development*, 9(2), pp.479-504.
5. Vaglio Laurin, G., Hawthorne, W.D., Chiti, T., Di Paola, A., Cazzolla Gatti, R., **Marconi, S.**, Noce, S., Grieco, E., Pirotti, F. and Valentini, R., 2016. *Does degradation from selective logging and illegal activities differently impact forest resources? A case study in Ghana*. *iForest-Biogeosciences and Forestry*, 9, pp.354-362.

Conference Papers and Technical Reports

1. M. Santini, S. Torresan, A. Trabucco, D. Balzarolo, A. Bonaduce, G. Coppini, ... **S. Marconi**, ..., & A. L. Zollo (2014) "Pilot study 3 Orientgate Report: Adaptation in water and coastal areas in Puglia, Italy."
2. A. Collalti, M. Santini, **S. Marconi**, M. Mattiuzzi, A. Candini, S. Natali, A. Nolè, R. Valentini (2013) "Application of the 3D-CMCC FEM (Three Dimension Forest Ecosystem Model)

on multi-temporal NDVI satellite imagery and future scenarios". First annual conference, Società Italiana per le Scienze del Clima.

Publications in Prep

1. **Marconi, S.**, Graves, Bohlman S, White EP. "Rethinking the fundamental unit of ecological remote sensing: Estimating individual level plant traits at scale", in prep.

Peer reviewed for journals:

Publons profile: <https://publons.com/a/1499258>

1. Spatio-Temporal Variability in Remotely Sensed Terrestrial Phenology Across Yellowstone National Park (**Remote sensing, IF 3.244**);
2. In Situ Observations Reveal How Spectral Reflectance Responds to Growing Season Phenology of an Open Evergreen Forest in Alaska (**Remote sensing, IF 3.244**);
3. Combined effects of temperature and precipitation on soil organic carbon changes in the uplands of eastern China (**Geoderma, IF 3.74**)
4. FENNEC - Functional Exploration of Natural Networks and Ecological Communities (**Methods in Ecology and Evolution, IF 6.36**)

Contributed Oral Presentations

5. **Marconi S**, Graves S.J., Bohlman S, Lichstein JW, Singh A, White EP. Scaling up remote sensing fundamental unit: from pixel to crowns. Inferring forest structure and traits syndromes for each individual tree within NEON forest sites. Ecological Society of America Annual Meeting, Contributed Talk in Statistics (COS 87) New Orleans, 2018
6. **Marconi S** Rethinking the fundamental unit of ecological remote sensing: Scaling functional and structural traits from individuals to landscape scale. UFBI Symposium 2018, Contributed talk.
7. S Graves*, T Caughlin, **S Marconi**, S Bohlman "From pixels to function: Tree growth estimation from canopy hyperspectral reflectance", ForestSat 2018, DC
8. **Marconi, S.**, Graves, S.J., Gong, D., Nia, M.S., ..., Bohlman S., Weng D., White EP., "Data Science for Plant Identification with Remote Sensing", Hyperspectral Image (HSI) Analysis Seminar series at University of Florida, 2017

Contributed Poster Presentations

1. **Marconi, S.**, White E. (2016). *Scaling Up Competition For Light From Leaf To Ecosystem: A New Framework To Represent Intra-crown Plasticity For Evergreen Species at the Gordon Research Conference: Unifying Ecology Across Scales* in Biddeford, Maine, USA.
2. **S. Marconi**, A. Collalti, M. Santini, R. Valentini (2014) "Assessing NEE and Carbon Dynamics Among European Forest Ecosystems: Development and Validation of a New Phenology and Soil Carbon Routines within the Process Oriented 3D-Cmcc-Forest-Ecosystem Model". Poster presentation at the annual meeting of the American Geophysical Union, December 18th, San Francisco CA.
3. **S. Marconi**, A. Collalti, M. Santini, R. Valentini (2013) "Simulating Carbon cycle and phenology in complex forests using a multi-layer process based ecosystem model; evaluation and use of 3D-CMCC-Forest Ecosystem Model in a deciduous and an

evergreen neighboring forests, within the area of Brasschaat (Be)". Poster presentation at the annual meeting of the American Geophysical Union, December 10th, San Francisco CA.

4. A. Collalti, M. Santini, **S. Marconi**, M. Mattiuzzi, A. Candini, S. Natali, A. Nolè, R. Valentini (2013) "*Application of the 3D-CMCC FEM (Three Dimension Forest Ecosystem Model) on multi-temporal NDVI satellite imagery and future scenarios*". Poster presentation at the annual meeting of the American Geophysical Union, December 13th, San Francisco CA.
5. A. Collalti, **S. Marconi**, G. Vacchiano, R. Motta, R. Valentini (2013) "*Simulazione della produttività di pinete di pino silvestre delle Alpi occidentali con il modello 3D-CMCC FEM*". IX Congresso Nazionale SISEF, 16th September, Bolzano, Italy.
6. A. Collalti, **S. Marconi**, A. Candini, M. Santini, R. Valentini (2013) "*3D-CMCC LAND, a new flexible tool for land modeling*". Poster presentation given at the 2013 "CMCC Annual meeting", Ugento (LE), Italy.

Languages

Italian (mother tongue)

English (fluent)