

Curriculum Vitae

Dr. Sergii Skakun

Assistant Professor

Department of Geographical Sciences, College of Information Studies (iSchool)
University of Maryland, College Park, MD, USA

CONTACT INFORMATION

Address: 1153 LeFrak Hall, College Park, MD 20742

Telephone: +1-(301)405-2179

E-Mail: skakun@umd.edu

EDUCATION

- 2004 – 2005 **Ph.D. in System Analysis and Theory of Optimal Solutions (Computer Science)**
Space Research Institute of National Academy of Sciences of Ukraine and National
Space Agency of Ukraine
Dissertation title: “Analysis of Computer Users Behavior Using Neural Networks”
Advisor: Prof. Nataliia Kussul
- 2002 – 2004 **M.S. in Applied Mathematics (with honors)**
National Technical University of Ukraine “Kyiv Polytechnic Institute” (GPA: 4.93/5.0)
- 1998 – 2002 **B.S. in Applied Mathematics (with honors)**
National Technical University of Ukraine “Kyiv Polytechnic Institute” (GPA: 5.0/5.0)

CAREER/EMPLOYMENT (EMPLOYERS, POSITIONS AND DATES)

- 2019/Jan – present Assistant Professor, Department of Geographical Sciences, College of Information
Studies (iSchool), University of Maryland, College Park, MD, USA
- 2018/Jul – 2019/Jan Associate Research Professor, Department of Geographical Sciences,
University of Maryland, College Park, MD, USA
- 2015/Oct – 2018/Jun Assistant Research Professor, Department of Geographical Sciences,
University of Maryland, College Park, MD, USA
- 2013/Dec – 2015/Sep Senior Engineer, Production Engineering Research Team,
Samsung SDI, Giheung, South Korea
- 2012/Nov – 2013/Nov Head of Laboratory for Satellite Monitoring, Department of Space Information
Technologies & Systems, Space Research Institute, National Academy of Science of
Ukraine and State Space Agency of Ukraine (SRI NASU-SSAU), Kyiv, Ukraine
- 2008/May – 2012/Oct Senior Research Scientist, Department of Space Information Technologies &
Systems, SRI NASU-SSAU, Kyiv, Ukraine
- 2006/Apr – 2008/Apr Research Scientist, Department of Space Information Technologies & Systems,
SRI NASU-SSAU, Kyiv, Ukraine
- 2004/Jun – 2006/Apr Junior Research Scientist, Department of Space Information Technologies & Systems,
SRI NASU-SSAU, Kyiv, Ukraine
- 2003/Sep – 2004/May System Engineer, Department of Space Information Technologies & Systems,
SRI NASU-SSAU, Kyiv, Ukraine

TEACHING EXPERIENCE AND LECTURES

- 2020/Jan-May Instructor for INST208A “How NASA Sees the Earth” course (spring semester, 29 students).
- 2019/Aug-Dec Instructor for GEOG372 “Remote Sensing” course (fall semester, 83 students).
- 2018/Jan-May Co-instructor for GEOG372 “Remote Sensing” course (spring semester, 48 students).
- 2018/Jan Guest lecturer for GEOG372 “Remote Sensing” course (winter semester).
Lecture: “Basics of Synthetic Aperture Radar (SAR)”
- 2007/Sep – 2013/Jun Associate Professor, National Technical University of Ukraine «Kiev Polytechnic Institute», Kyiv, Ukraine
Courses:
 - “*Computer System Architecture*” (Instructor, fall semesters, undergraduate)
 - “*Distributed Computing Systems*” (Instructor, fall semesters, undergraduate)
 - “*Programming*” (Assistant for labs, fall-spring semesters, undergraduate)
 - “*Intelligent Systems*” (Assistant for labs, fall-spring semesters, undergraduate)
- 2012/Sep – 2013/Jun Associate Professor, National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine
Instructor for various graduate courses:
 - “*Modelling in Environment*”; “*Risk Assessment Methods and Technologies*”; “*Grid Computing Technologies*”; “*Project Management*”; “*System and Application Software Engineering*”
- 2010/Nov Invited lecturer at the 5th ISPRS Student Consortium and WG VI/5 Summer School on “Advanced Remote Sensing for Mapping, Monitoring and Management of the Environment”, Hanoi, Vietnam
Lecture: “*Flood Mapping and Flood Risk Analysis Using Satellite Data*”
(course presentations available at http://un-spider.ikd.kiev.ua/?page_id=840)
- 2005/Sep – 2009/Jun Associate Professor, Branch of Software Engineering Department, National Aviation University
Courses:
 - “*Object-Oriented Programming*” (Instructor, fall semesters, undergraduate)

RESEARCH FOCUS

My research focus is to advance methods, models and emerging technologies in the area of data science for heterogeneous remote sensing data fusion, processing and analysis, and their applications to Earth System Science and areas of societal benefit.

PROJECTS AND GRANTS

PI or co-PI

- 2019 – 2022 UMD PI for the NASA project “Integration of L-band, C-band, and optical observations for agricultural monitoring”
PI: N. Torbick (Applied Geosolutions)
- 2018 – 2021 PI for the NASA project “Crop yield assessment and mapping by a combined use of Landsat-8, Sentinel-2 and Sentinel-1 images”
- 2018 – 2021 UMD PI for the NASA project “Maintenance and refinement of the Suomi NPP VIIRS Land Surface Reflectance product suite”
PI: E. Vermote (NASA/GSFC)

- 2018 UMD PI for the NASA SBIR project “Open-Source Deep Learning Classification and Visualization of Multi-Temporal Multi-Source Satellite Data”
PI: A. Chaudhary (Kitware Inc.)
- 2016 Co-PI for the Google Earth Engine Research Awards Program project “Large scale crop mapping in Ukraine using SAR and optical data fusion”
Co-PI: A. Shelestov (NTUU KPI, Ukraine)
- 2013 PI for the National Academy of Sciences of Ukraine Grant for young researches
“Development of geo-information agro portal and agroservices using satellite imagery”
- 2011 – 2013 Co-Lead for the CEOS Working Group on Information Systems and Services (WGISS) project “GEOSS Architecture for the use of Satellites for Disasters and Risk Assessment” (GA.4.Disasters).
Co-Lead: K. Moe (NASA/GSFC)
- 2009 – 2010 PI for the National Academy of Sciences of Ukraine Grant for young researchers
“Development of methods, models and information technologies for assessment of vegetation and soil state”
- 2008 – 2009 PI for the Grant of President of Ukraine “Development of cascade of hydro meteorological models for flood prediction”
- 2008 – 2009 PI for the World Federation of Scientists (WFS) National Scholarship Programme Fellowship “Flood extent extraction from SAR and optical satellite imagery”
- 2007 – 2008 PI for the National Academy of Sciences of Ukraine Grant for young researchers
“Development of intelligent methods and information technologies for parametric identification of hydrometeorological models”

Co-I or Collaborator

- 2020 – 2022 Co-I for the NASA project “Earth Observation for National Agricultural Monitoring”
PI: C. Nakalembe (UMD)
- 2019 – 2022 Co-I for the NASA project “Development of Surface Reflectance Products for the NASA Harmonization Landsat Sentinel Project”
PI: J.-C. Roger (UMD)
- 2018 – 2020 Collaborator for the Science and Technology Center in Ukraine (STCU) project “Intelligent technologies for satellite monitoring of environment based on deep learning and cloud computing (InTeLLeCT)” (no. 6386)
PI: N. Kussul (SRI, Ukraine)
- 2017 – 2020 Co-I for the NASA project “Long Term Land Surface Reflectance Record and Applications”
PI: J.-C. Roger (UMD)
- 2016 – 2018 Co-I for the NASA project “Support for the HLS (Harmonized Landsat-Sentinel-2) Project”
PI: J. Masek (NASA/GSFC)
- 2013 – 2015 Co-I for the EC FP7 project “Stimulating Innovation for Global Monitoring of Agriculture and its Impact on the Environment in support of GEOGLAM” (SIGMA) (www.geoglam-sigma.info).
PI: L. Bydekerke, S. Williams (VITO), Institutional PI: N. Kussul (SRI)
- 2012 Responsible officer for the State Space Agency of Ukraine contract on the development of the geoportal for Ukrainian remote sensing satellite Sich-2.
PI: N. Kussul (SRI)

- 2012 – 2013 Co-I for the Canadian Space Agency SOAR-JECAM project “SAR parameters optimization for crop classification”.
PI: N. Kussul (SRI)
- 2011 – present Co-I for the project Joint Experiment for Crop Assessment and Monitoring (JECAM) Ukraine.
PI: N. Kussul (SRI)
- 2011 – 2012 Co-I for the U.S. Civilian Research & Development Foundation (CRDF) project “Analysis of Climate Change & Food Security based on Remote Sensing & In Situ Data Sets”.
Co-PIs: F. Kogan (NOAA), N. Kussul (SRI)
- 2010 – 2011 Co-I for the EC Joint Research Center (JRC) project “Crop area estimation with satellite images in Ukraine”.
PI: N. Kussul (SRI)
- 2010 – 2013 Co-I for the international project “The Namibian Trans-boundary Flood-Disease Monitoring and Mitigation System – An International SensorWeb Pilot Project”
(<http://sensorweb.nasa.gov/NamibiaFlood.html>).
Institutional PI: N. Kussul (SRI)
- 2009 – 2012 Co-I for the National Academy of Sciences of Ukraine (NASU) project “Development of distributed Grid system for disaster monitoring for UN-SPIDER Regional Support Office in Ukraine”.
PI: N. Kussul (SRI)
- 2009 Co-I for the GEOSS Architecture Implementation Pilot Phase 2 (AIP-2) project “Sensor Web for Flood Applications”.
PI: N. Kussul (SRI)
- 2007 – 2011 Co-I for the European Space Agency (ESA) Category-1 project “Wide Area Grid Testbed for Flood Monitoring using Spaceborne SAR and Optical Data”.
PI: N. Kussul (SRI)
- 2007 – 2011 Co-I for the European Space Agency (ESA) Category-1 project “Regional drought monitoring using wide swath SAR and optical data”.
PI: N. Kussul (SRI)
- 2005 – 2007 Co-I for the Science and Technology Center in Ukraine (STCU) and National Academy of Sciences of Ukraine (NASU) project “Grid technologies for environmental monitoring using satellite data”.
PI: N. Kussul (SRI)

PUBLICATIONS

Books

1. Kussul N., Skakun S., Shelestov A. “**Risk analysis of natural hazards based on satellite data**”, Kyiv, “Naukova Dumka”, 2014, 184 p. ISBN 978-966-00-1449-7 (in Ukrainian)
2. Kussul N., Skakun S., Shelestov A. “**Geospatial analysis of risk of natural hazards**”, Kyiv, “Naukova Dumka”, 2014, 258 p. ISBN 978-966-00-1207-3 (in Ukrainian)
3. Kussul N., Shelestov A., Skakun S., Kravchenko A. “**Intelligent Computations for Earth Observation Data Processing**”, Kyiv: “Naukova Dumka”, 2007, 196 p. ISBN 978-966-00-0788-8 (in Russian)

Book chapters

1. Kerdiles, H., Gallego, J., Leo, O., Skakun, S., Kravchenko, O., Kussul, N. “**Agriculture Services. Kiev Oblast, Ukraine**”, In: *The Growing Use of GMES across Europe's Regions*. Joint publication of European Space Agency (ESA) and Network of European Regions Using Space Technologies (NEREUS), 2012, pp. 22–23.

2. Kussul N., Shelestov A., Skakun S. “**Grid Technologies for Satellite Data Processing and Management Within International Disaster Monitoring Projects**”, In: *S. Fiore, G. Aloisio (Eds.) Grid and Cloud Database Management*, 2011, Springer, pp. 279–306. ISBN 978-3-642-20044-1
3. Kussul N., Shelestov A., Skakun S. “**Flood Monitoring on the Basis of SAR Data**”, In: *F. Kogan, A. Powell, O. Fedorov (Eds.) “Use of Satellite and In-Situ Data to Improve Sustainability”*. *NATO Science for Peace and Security Series C: Environmental Security*, 2011, Springer, pp. 19–29. ISBN 978-90-481-9617-3
4. Kussul N., Shelestov A., Skakun S., Kravchenko O. “**High performance Intelligent Computations for Environmental and Disaster Monitoring**”, *Intelligent Data Analysis in Global Monitoring for Environment and Security (Krassimir Markov, Vitalii Velychko editors), ITHEA, Sofia, Bulgaria*, 2011, pp. 64–92. ISBN 978-954-16-0045-0

Journal articles (peer-reviewed)

1. Brown, M. G., Skakun, S., He, T., & Liang, S. (2020). Intercomparison of Machine-Learning Methods for Estimating Surface Shortwave and Photosynthetically Active Radiation. **Remote Sensing**, *12*(3), art. num. 372.
2. Kussul, N., Lavreniuk, M., Kolotii, A., Skakun, S., Rakoid, O., & Shumilo, L. (2020). A Workflow for Sustainable Development Goals Indicators Assessment Based on High Resolution Satellite Data. **International Journal of Digital Earth**, *13*(2), 309–321.
3. Skakun, S., Justice, C. O., Kussul, N., Shelestov, A., & Lavreniuk, M. (2019). Satellite data reveal cropland losses in South-Eastern Ukraine under military conflict. **Frontiers in Earth Science**, *7*, art. num. 305.
4. Skakun, S., Vermote, E., Franch, B., Roger, J. C., Kussul, N., Ju, J., & Masek, J. (2019). Winter Wheat Yield Assessment from Landsat 8 and Sentinel-2 Data: Incorporating Surface Reflectance, Through Phenological Fitting, into Regression Yield Models. **Remote Sensing**, *11*(15), art. num. 1768.
5. Skakun, S., Vermote, E. F., Roger, J.-C., Justice, C. O., & Masek, J. G. (2019). Validation of the LaSRC cloud detection algorithm for Landsat 8 images. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, *12*(7), 2439–2446.
6. Franch, B., Vermote, E. F., Skakun, S., Roger, J. C., Becker-Reshef, I., Murphy, E., & Justice, C. (2019). Remote sensing based yield monitoring: Application to winter wheat in United States and Ukraine. **International Journal of Applied Earth Observation and Geoinformation**, *76*, 112–127.
7. Franch, B., Vermote, E., Skakun, S., Roger, J.-C., Masek, J. G., Ju, J., & Villaescusa-Nadal, J.-L. (2019). A new method for Landsat and Sentinel 2 (HLS) BRDF normalization and surface albedo. **Remote Sensing**, *11*(6), art. num. 632.
8. Villaescusa-Nadal, J. L., Franch, B., Roger, J. C., Vermote, E. F., Skakun, S., & Justice, C. (2019). Spectral Adjustment Model's Analysis and Application to Remote Sensing Data. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, *12*(3), 961–972.
9. Santamaria-Artigas, A. E., Franch, B., Guillevic, P., Roger, J.-C., Vermote, E. F., & Skakun, S. (2019). Evaluation of Near-Surface Air Temperature from Reanalysis Over the United States and Ukraine: Application to Winter Wheat Yield Forecasting. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, *12*(7), 2260–2269.
10. Waldner, F., Bellemans, N., Hochman, Z., Newby, T., de Abelleira, D., Verón S. R., Bartalev, S., Lavreniuk, M., Kussul, N., Le Maire, G., Simões, M., Skakun, S., & Defourny, P. (2019). Roadside collection of training data for cropland mapping is viable when environmental and management gradients are surveyed. **International Journal of Applied Earth Observation and Geoinformation**, *80*, 82–93.
11. Skakun, S., Justice, C., Vermote, E., & Roger, J.-C. (2018). Transitioning from MODIS to VIIRS: an analysis of inter-consistency of NDVI data sets for agricultural monitoring. **International Journal of Remote Sensing**, *39*(4), 971–992.

12. Claverie, M., Ju, J., Masek, J. G., Dungan, J. L., Vermote, E. F., Roger, J.-C., Skakun, S. V., & Justice, C. (2018). The Harmonized Landsat and Sentinel-2 surface reflectance data set. **Remote Sensing of Environment**, *219*, 145–161.
13. Franch, B., Vermote, E., Skakun, S., Roger, J. C., Santamaria-Artigas, A., Villaescusa-Nadal, J. L., & Masek, J. (2018). Towards Landsat and Sentinel-2 BRDF normalization and albedo estimation: a case study in the Peruvian Amazon forest. **Frontiers in Earth Science**, *6*, art. num. 185.
14. Kussul, N., Lavreniuk, M., Shelestov, A., & Skakun, S. (2018). Crop inventory at regional scale in Ukraine: developing in season and end of season crop maps with multi-temporal optical and SAR satellite imagery. **European Journal of Remote Sensing**, *51*(1), 627–636.
15. Zhang, H. K., Roy, D. P., Yan, L., Li, Z., Huang, H., Vermote, E., Skakun, S., Roger, J.-C. (2018). Characterization of Sentinel-2A and Landsat-8 top of atmosphere, surface, and nadir BRDF adjusted reflectance and NDVI differences. **Remote Sensing of Environment**, *215*, 482–494.
16. Becker-Reshef, I., Franch, B., Barker, B., Murphy, E., Santamaria-Artigas, A., Humber, M., Skakun, S., & Vermote, E. (2018). Prior Season Crop Type Masks for Winter Wheat Yield Forecasting: A US Case Study. **Remote Sensing**, *10*(10), art. num. 1659.
17. Skakun, S., Franch, B., Vermote, E., Roger, J.-C., Becker-Reshef, I., Justice, C., & Kussul, N. (2017). Early season large-area winter crop mapping using MODIS NDVI data, growing degree days information and a Gaussian mixture model. **Remote Sensing of Environment**, *195*, 244–258.
18. Skakun, S., Vermote, E., Roger, J.-C., & Justice, C. (2017). Multi-spectral misregistration of Sentinel-2A images: analysis and implications for potential applications. **IEEE Geoscience and Remote Sensing Letters**, *14*(12), 2408–2412.
19. Skakun, S., Roger, J.-C., Vermote, E., Masek, J., & Justice, C. (2017). Automatic sub-pixel co-registration of Landsat-8 OLI and Sentinel-2A MSI images using phase correlation and machine learning based mapping. **International Journal of Digital Earth**, *10*(12), 1253–1269.
20. Skakun, S., Vermote, E., Roger, J.-C., & Franch, B. (2017). Combined Use of Landsat-8 and Sentinel-2A Images for Winter Crop Mapping and Winter Wheat Yield Assessment at Regional Scale. **AIMS Geosciences**, *3*(2), 163–186.
21. Kussul, N., Lavreniuk, M., Skakun, S., & Shelestov, A. (2017). Deep Learning Classification of Land Cover and Crop Types Using Remote Sensing Data. **IEEE Geoscience and Remote Sensing Letters**, *14*(5), 778–782.
22. Shelestov, A., Kolotii, A., Skakun, S., Baruth, B., Lopez-Lozano, R., Yailymov, B. (2017). Biophysical parameters mapping within the SPOT-5 Take 5 initiative. **European Journal of Remote Sensing**, *50*(1), 300–309.
23. Shelestov, A., Lavreniuk, M., Kussul, N., Novikov, A., & Skakun S. (2017). Exploring Google Earth Engine Platform for Big Data Processing: Classification of Multi-Temporal Satellite Imagery for Crop Mapping. **Frontiers in Earth Science**, *5*, art num. 17.
24. Skakun, S., Kussul, N., Shelestov, A., & Kussul, O. (2016). The use of satellite data for agriculture drought risk quantification in Ukraine. **Geomatics, Natural Hazards and Risk**, *7*(3), 901–917.
25. Skakun, S., Kussul, N., Shelestov, A. Y., Lavreniuk, M., & Kussul, O. (2016). Efficiency assessment of multitemporal C-band Radarsat-2 intensity and Landsat-8 surface reflectance satellite imagery for crop classification in Ukraine. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, *9*(8), 3712–3719.
26. Kussul, N., Lemoine, G., Gallego, J., Skakun, S., Lavreniuk, M., & Shelestov, A. (2016). Parcel-based Crop Classification in Ukraine Using Landsat-8 Data and Sentinel-1A Data. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, *9*(6), 2500–2508.
27. Waldner, F., de Abelleira, D., Veron, S. R., Zhang, M., Wu, B., Plotnikov, D., Bartalev, S., Lavreniuk, M., Skakun, S., Kussul, N., Le Maire, G., Dupuy, S., Jarvis, I., & Defourny, P. (2016). Towards a set of agrosystem-specific cropland mapping methods to address the global cropland diversity. **International Journal of Remote Sensing**, *37*(14), 3196–3231.

28. Lavreniuk, M. S., Skakun, S. V., Shelestov, A. Ju, Yalimov, B. Ya., Yanchevskii, S. L., Yaschuk, D. Ju., & Kosteckiy A.I. (2016). Large-Scale Classification of Land Cover Using Retrospective Satellite Data. **Cybernetics and Systems Analysis**, 52(1), 127–138.
29. Skakun, S., Kussul, N., Shelestov, A., & Kussul, O. (2014). Flood hazard and flood risk assessment using a time series of satellite images: A case study in Namibia. **Risk Analysis**, 34(8), 1521–1537.
30. Gallego, F. J., Kussul, N., Skakun, S., Kravchenko, O., Shelestov, A., & Kussul, O. (2014). Efficiency assessment of using satellite data for crop area estimation in Ukraine. **International Journal of Applied Earth Observation and Geoinformation**, 29, 22–30.
31. Kussul, N., Shelestov, A., Skakun, S., Li, G., Kussul, O., & Xie, J. (2014). Service-oriented infrastructure for flood mapping using optical and SAR satellite data. **International Journal of Digital Earth**, 7(10), 829–845.
32. Kussul, N., Skakun, S., Shelestov, A. Y., Kussul, O., & Yailymov, B. (2014). Resilience aspects in the sensor Web infrastructure for natural disaster monitoring and risk assessment based on Earth observation data. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, 7(9), 3826–3832.
33. Kussul, O., Kussul, N., & Skakun, S. (2014). A Utility-based Reputation Model for Grid Resource Management System. **Computing and Informatics**, 33(5), 1139–1167.
34. Skakun, S.V., & Basarab, R.M. (2014). Reconstruction of missing data in time-series of optical satellite images using self-organizing Kohonen maps. **Journal of Automation and Information Sciences**, 46(12), 19–26.
35. Mandl, D., Frye, S., Cappelaere, P., Handy, M., Policelli, F., Katjizeu, M., Van Langenhove, G., Aube, G., Saulnier, J.-F., Sohlberg, R., Silva, J.A., Kussul, N., Skakun, S., Ungar, S.G., Grossman, R., & Szarzynski, J. (2013). Use of the Earth Observing One (EO-1) Satellite for the Namibia SensorWeb Flood Early Warning Pilot. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, 6(2), 298–308.
36. Kogan, F., Kussul, N., Adamenko, T., Skakun, S., Kravchenko, O., Kryvobok, O., Shelestov, A., Kolotii, A., Kussul, O. & Lavrenyuk, A. (2013). Winter wheat yield forecasting in Ukraine based on Earth observation, meteorological data and biophysical models. **International Journal of Applied Earth Observation and Geoinformation**, 23, 192–203.
37. Shelestov, A.Yu., Kravchenko, A.N., Skakun, S.V., Voloshin, S.V., & Kussul, N.N. (2013). Geospatial information system for agricultural monitoring. **Cybernetics and Systems Analysis**, 49(1), 124–132.
38. Kussul, O., Kussul, N., & Skakun, S. (2013). Assessing security threat scenarios for utility-based reputation model in Grids. **Computers & Security**, 34, 1–15.
39. Kogan, F., Kussul, N., Adamenko, T., Skakun, S., Kravchenko, O., Kryvobok, O., Shelestov, A., Kolotii, A., Kussul, O., & Lavrenyuk A. (2013). Winter wheat yield forecasting: A comparative analysis of results of regression and biophysical models. **Journal of Automation and Information Sciences**, 45(6), 68–81.
40. Kussul, N., Mandl, D., Moe, K., Mund, J.-P., Post, J., Shelestov, A., Skakun, S., Szarzynski, J., Van Langenhove, G., & Handy, M. (2012). Interoperable Infrastructure for Flood Monitoring: SensorWeb, Grid and Cloud. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, 5(6), 1740–1745.
41. Kussul, N., Shelestov, A., Skakun, S., Li, G., & Kussul, O. (2012). The Wide Area Grid Testbed for Flood Monitoring Using Earth Observation Data. **IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**, 5(6), 1746–1751.
42. Kussul, N., Sokolov, B., Zyelyk, Y., Zelentsov, V., Skakun, S., & Shelestov, A. (2010). Disaster Risk Assessment Based on Heterogeneous Geospatial Information. **Journal of Automation and Information Sciences**, 42(12), 32–45.
43. Kussul, N., Shelestov, A., Skakun, S., Kravchenko, O., Gripich, Y., Hluchy, L., Kopp, P., & Lupian, E. (2010). The Data Fusion Grid Infrastructure: Project Objectives and Achievements. **Computing and Informatics**, 29(2), 319–334.

44. Skakun, S. (2010). A Neural Network Approach to Flood Mapping Using Satellite Imagery. **Computing and Informatics**, 29(6), 1013–1024.
45. Kussul, N., Shelestov, A., & Skakun, S. (2009). Grid and Sensor Web Technologies for Environmental Monitoring. **Earth Science Informatics**, 2(1-2), 37–51.
46. Kussul, N., Shelestov, A., & Skakun, S. (2008). Grid System for Flood Extent Extraction from Satellite Images. **Earth Science Informatics**, 1(3-4), 105–117.
47. Popov, M., Kussul, N., Stankevich, S., Kozlova, A., Shelestov, A., Kravchenko, O., Korbakov, M., & Skakun, S. (2008). Web Service for Biodiversity Estimation Using Remote Sensing Data. **International Journal of Digital Earth**, 4(1), 367–376.
48. Skakun, S., Nasuro, E., Lavrenyuk, A., & Kussul, O. (2007). Analysis of Applicability of Neural Networks for Classification of Satellite Data. **Journal of Automation and Information Sciences**, 39(3), 37–50.
49. Kussul, N.N., Lupian, E.A., Shelestov, A.Yu., Skakun, S.V., Tishchenko, Yu.G., & Hluchy, L. (2007). Determination of inundated territories on the basis of integration of heterogeneous data. **Journal of Automation and Information Sciences**, 39(12), 42–51.
50. Shelestov, A.Yu., Kussul, N.N., & Skakun, S.V. (2006). Grid technologies in monitoring systems based on satellite data. **Journal of Automation and Information Sciences**, 38(3), 69–80.

Conference proceedings/abstracts (referred)

1. Skakun, S., Franch, B., Vermote, E., Roger, J. C., Kussul, N., & Masek, J. (2019, July). The Use of Landsat 8 and Sentinel-2 Data and Meteorological Observations for Winter Wheat Yield Assessment. In *IGARSS 2019-2019 IEEE International Geoscience and Remote Sensing Symposium* (pp. 6291-6294). IEEE.
2. Skakun, S., Franch, B., Vermote, E., Roger, J. C., Justice, C., Masek, J., & Murphy, E. (2018, July). Winter Wheat Yield Assessment Using Landsat 8 and Sentinel-2 Data. In *IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium* (pp. 5964-5967). IEEE.
3. Masek, J., Ju, J., Roger, J. C., Skakun, S., Claverie, M., & Dungan, J. (2018, July). Harmonized Landsat/Sentinel-2 Products for Land Monitoring. In *IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium*(pp. 8163-8165). IEEE.
4. Franch, B., Vermote, E., Skakun, S., Roger, J. C., Becker-Reshef, I., & Justice, C. (2018, July). Enhancing Remote Sensing Based Yield Forecasting: Application to Winter Wheat in United States. In *IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium* (pp. 8177-8180). IEEE.
5. Vermote, E., Roger, J. C., Franch, B., & Skakun, S. (2018, July). LaSRC (Land Surface Reflectance Code): Overview, application and validation using MODIS, VIIRS, LANDSAT and Sentinel 2 data's. In *IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium* (pp. 8173-8176). IEEE.
6. Nadal, J. L. V., Franch, B., Roger, J. C., Skakun, S., Vermote, E., & Justice, C. (2018, July). Spectrally Adjusted Surface Reflectance and its Dependence with NDVI for pAssive Optical Sensors. In *IGARSS 2018-2018 IEEE International Geoscience and Remote Sensing Symposium* (pp. 6452-6455). IEEE.
7. Shelestov, A., Sumilo, L., Lavreniuk, M., Vasiliev, V., Bulanaya, T., Gomilko, I., ... & Skakun, S. (2018, July). Indoor and outdoor air quality monitoring on the base of intelligent sensors for smart city. In *XVIII International Conference on Data Science and Intelligent Analysis of Information* (pp. 134-145). Springer, Cham.
8. Skakun, S., Vermote, E., Roger, J.-C., Justice, C. (2018). “Analysis of Multi-spectral Misregistration of Sentinel-2A/MSI Images,” In *2nd Sentinel-2 Validation Team Meeting*, 29–31 January 2018, Frascati, Rome, Italy, p. 40.

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NASA Earth Sciences Division Science Highlights

1. “**Harmonizing Landsat and Sentinel-2 Reflectances for Better Land Monitoring**”, Jeffrey Masek, Biospheric Sciences, NASA GSFC, Eric Vermote, Terrestrial Information Systems, NASA GSFC, Belen Franch, University of Maryland, Jean-Claude Roger, University of Maryland, Sergii Skakun, University of Maryland, Junchang Ju, USRA, NASA GSFC, Martin Claverie, University of Maryland, NASA GSFC, Jennifer Dungan, NASA ARC (July, 2016). http://science.gsfc.nasa.gov/earth/content/uploadFiles/scihi_hydrobio_ppt/2016_7_highlights.pdf.
2. “**Early Season Large-area Winter Crop Mapping using MODIS NDVI data and Growing Degree Days Information**”, Sergii Skakun, Belen Franch, Eric Vermote, Jean-Claude Roger, Inbal Becker-

PARTICIPATION AT CONFERENCES, WORKSHOPS, SEMINARS

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- Skakun, S., Roger, J. C., & Vermote, E. (2019, December). Analysis of corn and soybean yield variability at field scale using VHR satellite data. In **AGU Fall Meeting 2019**. AGU. (*poster*)
- Skakun S. *et al.* (2019) “Analysis of corn and soybean yield variability at field scale using VHR satellite data”, **IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2019**, July 28 – August 2, 2019, Yokohama, Japan (*oral*)
- Skakun S. *et al.* (2019) “LaSRC Cloud Detection Algorithm for Landsat 8 and Sentinel-2 Data”, **JpGU 2019**, May 26–30, 2019, Chiba, Japan (*oral*)
- Skakun S. *et al.* (2019) “Winter wheat yield assessment from Landsat 8 and Sentinel-2 data: why data normalization matters”, **ESA Living Planet Symposium**, May 13–17, 2019, Milan, Italy (*poster*)
- Skakun S. *et al.* (2019) “Crop Yield Assessment and Mapping by a Combined use of Landsat, Sentinel 2 and Sentinel 1”, **2019 NASA LCLUC Spring Science Team Meeting**, April 9–11, 2019, Rockville MD, USA (*oral*)
- Skakun S. *et al.* (2019) “Evaluation of High Resolution Data for LCLUC Science: Combined use of VHR WorldView-2/3 and Planet datasets for MuSLI agricultural monitoring”, **2019 NASA LCLUC Spring Science Team Meeting**, April 9–11, 2019, Rockville MD, USA (*oral*)
- Skakun S. *et al.* (2019) “LaSRC Cloud Detection Algorithm for Landsat 8 and Sentinel-2 Data”, **American Geophysical Union (AGU) Fall Meeting 2018**, December 10–14, 2018, Washington DC, USA (*oral*)
- Skakun S., *et al.* (2018) “Application of harmonized Landsat Sentinel-2 product for crop yield assessment”, **6th International Conference GEO-UA 2018 «Earth observations for sustainable development and security»**, 18-19 September 2018, Kyiv, Ukraine (*oral*)
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- Skakun, S., Roger, J.-C., Vermote, E., Franch, B., Justice, C., & Masek, J. (2018). “Combined Use of Landsat-8 and Sentinel-2 Data for Agricultural Monitoring”, **Emerging Technologies and Methods in Earth Observation for Agricultural Monitoring**, USDA, February 13–15, 2018, Beltsville, MD, USA (*invited presentation, oral*)
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- Skakun, S. (2017) “Machine Learning and Remote Sensing – what’s going on?”, **GEOG Seminar Series**, November 30, 2017, College Park, MD (*oral*)
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- Kussul, N., Skakun, S., Shelestov, A. (2013) “Integration of Grid and Sensor Web for Flood Monitoring and Risk Assessment from Heterogeneous Data”, **European Geoscience Union (EGU) 2013**, April 9, 2013, Vienna, Austria (*oral*)
- Skakun S. (2013) “Disaster monitoring and risk assessment using EO and SensorWeb”, **GEOSS Future Products Workshop 2013**, March 26, 2013, NOAA, Silver Spring, USA (*invited, remotely, oral*)
- Skakun S., *et al.* (2012). “The use of satellite data for drought monitoring & food security in Ukraine in the context of climate change,” **United Nations International Conference on Space-based Technologies for Disaster Management - "Risk Assessment in the Context of Global Climate Change"**, November 7-9, 2012, Beijing, China (*oral*)
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- Skakun, S., Franch, B., Vermote, E., & Roger, J.-C. (2017). “Landsat and Sentinel-2A Surface Albedo Estimation and Evaluation Against In Situ Measurements Across the US SURFRAD Network”, **American Geophysical Union (AGU) Fall Meeting 2017**, December 11–15, 2017, New Orleans, LA, USA (*oral*)
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- Kussul O., Kussul N., Skakun S., Kravchenko O., Shelestov A., Kolotii A. (2013). “Assessment of relative efficiency of using MODIS data to winter wheat yield forecasting in Ukraine”, **IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2013**, 21-26 July 2013, Melbourne, Australia (*oral*)
- Kussul N., Shelestov A., Skakun S. (2013). “EO for agriculture monitoring in Ukraine within international initiatives GLAM and JECAM”, **GEO European Project’s Workshop 2013**, 15–16 April 2013, Barcelona, Spain (*oral*)
- Kussul N., Skakun S., et al. (2011). “Winter wheat yield forecasting in Ukraine using satellite data”, **Technical Meeting on GEOSS Joint Experiment for Crop Assessment and Monitoring (JECAM) at the Department of Geography, University of Maryland**, College Park, MD, USA, November, 7, 2011 (*oral*)
- Kussul N., Skakun S., et al. (2011). “Winter wheat yield forecasting in Ukraine using satellite data”, **Meeting at NOAA on CRDF project**, Camp Springs, MD, USA, November, 1, 2011 (*oral*)
- Kussul N., Skakun S., Shelestov A. (2008). “ESA CAT-1 Project - Wide Area Grid Testbed”, **3rd ESA GRID & e-Collaboration Workshop for the Earth Science Community**, Jan. 16-17, 2008, ESA-ESRIN, Frascati, Italy (*oral*)

ADVISING

2019 – present	Yiming Zhang, PhD (Advisor)
2019 – present	Allison Baer, PhD (Committee Member)
2019 – present	Meghavi Prashnani, PhD (Committee Member)
2018 – present	Meredith Brown, PhD (Committee Member)
2018 – present	José Luis Villaescusa, PhD (Committee Member)
2018 – present	Andres Eduardo Santamaria Artigas, PhD (Committee Member)

AWARDS, HONORS & FELLOWSHIPS

2009 – 2010	President of Ukraine Fellowship for young researchers
2007 – 2008	President of Ukraine Fellowship for young researchers
2005	Special prize award for the project “Intelligent monitoring system of computer system’s users behaviour” in Young Scientists Day Contest sponsored by Samsung
2003	Young Scientists Award of the National Academy of Science of Ukraine for the project “Intelligent Multi-Agent Security System”

PROFESSIONAL SOCIETY/COMMUNITY MEMBERSHIP

2019 – present	IEEE Geoscience & Remote Sensing Society
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2016 – present	American Geophysical Union (AGU)
2011 – present	Group on Earth Observations (GEO) Agricultural Monitoring Community of Practice
2013	IEEE Geoscience & Remote Sensing Society

SERVICE

2020 – present	Associate Editor, <i>Remote Sensing of Environment</i>
2019	Reviewer of the project proposal for Natural Environment Research Council (NERC, UK)
2018 – present	Member of the Symposia Working Group of the UMD Year of Data Science (YoDS) Initiative
2018 – present	Task Coordinator of the Cloud Masking Inter-comparison eExercise (CMIX) within CEOS WGCV
2018 – present	Editorial Board Member, section “ <i>Remote Sensing Image Processing</i> ”, journal <i>Remote Sensing</i>
2017 – present	Associate Editor of the journal <i>AIMS Geosciences</i> (Section: Computing Sciences for Environment)
2011 – present	Reviewer for international peer-reviewed journals <i>Remote Sensing of Environment</i> , <i>IEEE Transactions on Geoscience and Remote Sensing</i> , <i>IEEE Geoscience and Remote Sensing Letters</i> , <i>Remote Sensing Letters</i> , <i>Remote Sensing</i> , <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , <i>International Journal of Remote Sensing</i> , <i>Sensors</i> , <i>Canadian Journal of Remote Sensing</i> , <i>Scientific Reports</i> , <i>Remote Sensing Applications: Society and Environment</i> , <i>PLOS ONE</i>
2017	Reviewer of the project proposals for The Netherlands Organisation for Scientific Research (NWO)
2017	Chair of the <i>IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017)</i> Sessions on “ <i>Land Use Applications I</i> ” and “ <i>Land Use and Land Cover Mapping</i> ” (July 23-28, 2017, Fort Worth, Texas, USA)
2017	Reviewed a book proposal for the <i>Springer Publishing House</i>
2016	Chair of the <i>IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2016)</i> Session on “ <i>Remote Sensing for Agricultural Hydrology</i> ” (July 10-15, 2016, Beijing, China)
2016 – 2017	Alternate Representative of the Research Faculty for two Committees: Graduate Committee and MPS GIS Organizational Committee
2016	Reviewed a book proposal for the <i>Elsevier Publishing House</i>
2012	Scientific Secretary of the Third Conference on “ <i>Earth Observations for Sustainable Development and Security (GEO-UA)</i> ” (September 3-7, 2012, Crimea, Ukraine)
2011, 2012	Referee for the <i>Regional Intel ISEF Competition in Ukraine</i> (Computer Science section)
2010 – 2013	Expert of the <i>United Nations Platform for Space-based Information for Disaster Management and Emergency Response</i> (UN-SPIDER) Regional Support Office in Ukraine
2010, 2012, 2013	Contribution as added value service provider to <i>International Charter “Space & Major Disasters”</i> activations (Jan 2010, Sep 2012, Jan 2013)
2010	Member of Organizing Committee for the Second Conference on “ <i>Earth Observations for Sustainable Development and Security</i> ” (June 14–17, 2010, Kyiv, Ukraine)
2009 – 2013	Scientific Secretary for the Specialized Scientific Council for defense of PhD and Doctoral dissertations (at Space Research Institute). Served as Scientific Secretary and Committee Member for 7 dissertation defenses
2008	Chair the Session on Computational Chemistry & Material Science at the 4th International Workshop on Grid Computing for Complex Problems (GCCP 2008), Bratislava, Slovak Republic, October 27-29, 2008
2005 – 2013	Member of the <i>CEOS Working Group on Information Systems and Services</i> (WGISS)

CERTIFICATIONS (COURSES & TRAINING)

- **“Algorithms: Design and Analysis, Part 1”** by Stanford University on Coursera, March 2015 (online)
- **“Image and video processing: From Mars to Hollywood with a stop at the hospital”** by Duke University on Coursera, March 2015 (online)
- **“Machine Learning”** by Stanford University on Coursera, December 2014 (online)
- **“GIS for Emergency Preparedness” Workshop and Training organized by the US Army Corps of Engineers and Ministry of Emergencies of Ukraine** – Kyiv, Ukraine, April 2010
- **4th ESA Earth Observation Summer School “Earth System Monitoring and Modelling”** – Frascati, Rome, Italy, August 2008
- **Alpbach Summer School “Monitoring Natural Hazards from Space”** – Alpbach, Austria, July 2006
- **Workshop “Parallel and distributed computations: theory and practice”** – Kyiv, Ukraine, July 2005

Date: April 24, 2020