

Curriculum Vitae

Dr. Sergii Skakun

Assistant Professor

Department of Geographical Sciences, College of Information Studies (iSchool)
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CONTACT INFORMATION

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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

2022/Aug-Dec	Instructor for GEOG371 “Programming for Image Analysis” course (Fall semester).
2021/Aug-Dec	Instructor for GEOG371 “Programming for Image Analysis” course (Fall semester, 13 students).
2021/Jan-May	Instructor for INST208A “How NASA Sees the Earth” course (Spring semester, 16 students).
2020/Aug-Dec	Instructor for GEOG372 “Remote Sensing” course (Fall semester, 97 students).
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: <ul style="list-style-type: none">• “<i>Computer System Architecture</i>” (Instructor, Fall semesters, undergraduate)• “<i>Distributed Computing Systems</i>” (Instructor, Fall semesters, undergraduate)• “<i>Programming</i>” (Assistant for labs, Fall-Spring semesters, undergraduate)• “<i>Intelligent Systems</i>” (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: <ul style="list-style-type: none">• “<i>Modelling in Environment</i>”; “<i>Risk Assessment Methods and Technologies</i>”; “<i>Grid Computing Technologies</i>”; “<i>Project Management</i>”; “<i>System and Application Software Engineering</i>”
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: “ <i>Flood Mapping and Flood Risk Analysis Using Satellite Data</i> ” (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: <ul style="list-style-type: none">• “<i>Object-Oriented Programming</i>” (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

- 2022 – 2025 PI for the NASA project “Agriculture Velocity of Winter Wheat” within Future Investigators in NASA Earth and Space Science and Technology (FINESST).
FI: L. Shumilo (graduate student)
- 2022 – 2025 Co-PI for the NSF project “FAI: Advancing Deep Learning Towards Spatial Fairness” (NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon).
PI: X. Jia (University of Pittsburgh), Co-PI: Y. Xie (UMD)
- 2021 – 2024 UMD PI for the NASA project “Maintenance and refinement of the Suomi NPP and NOAA-20 VIIRS Land Surface Reflectance product suite”.
PI: E. Vermote (NASA/GSFC)
- 2021 – 2024 PI for the NASA project “Climate induced agriculture change hotspots and its implication to global food security in the former Soviet Union (Russia and Ukraine)” within Future Investigators in NASA Earth and Space Science and Technology (FINESST).
FI: A. Qadir (graduate student)
- 2021 – 2023 PI for the NASA project “High-Impact Hot Spots of Land Cover Land Use Change: Ukraine and Neighboring Countries”
- 2021 – 2022 UMD PI for the IARPA/NGA project “WATCH: Wide Area Terrestrial Change Hypercube”
PI: M. Leotta (Kitware)
- 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

- 2022 – 2023 Co-I for the NASA project “Coupled Statistics-Physics Guided Learning to Harness Heterogeneous Earth Data at Large Scales”
PI: Y. Xie (UMD)
- 2020 – 2023 Co-I for the NASA project “In-Season Crop Monitoring using Earth Observations in Major Food-Producing Countries to Mitigate Market Uncertainty Caused by the COVID-19 Pandemic”
PI: H. Kerner (UMD)
- 2020 – 2023 Co-I for the NOAA project “Development of a Next-Generation Science-Quality Geostationary Satellite Active Fire Product”
PI: L. Giglio (UMD)
- 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. Becker-Reshef, I. *et al.* (2022). **The NASA Harvest Program on Agriculture and Food Security**. In: Vadrevu, K.P., Le Toan, T., Ray, S.S., Justice, C. (eds) *Remote Sensing of Agriculture and Land Cover/Land Use Changes in South and Southeast Asian Countries*. Springer, Cham., pp. 53–80. https://doi.org/10.1007/978-3-030-92365-5_3
2. Bandaru, V., Chirumamilla, P., Skakun, S., Lasko, K., Yampracha, S. (2022). **Application of Geo-CropSim Framework for Rainfed Sugarcane Yield Assessment in Thailand**. In: Vadrevu, K.P., Le Toan, T., Ray, S.S., Justice, C. (eds) *Remote Sensing of Agriculture and Land Cover/Land Use Changes in South and Southeast Asian Countries*. Springer, Cham., pp. 381–397. https://doi.org/10.1007/978-3-030-92365-5_22

3. Howard, A., Chipanshi, A., Davidson, A., Desjardins, R., Kolotii, A., Kussul, N., McNairn, H., Skakun, S. and Shelestov, A. (2018). **Measurement Techniques**. In *Agroclimatology* (eds J.L. Hatfield, M.V. Sivakumar and J.H. Prueger), pp. 489-517. doi:[10.2134/agronmonogr60.2014.0056.5](https://doi.org/10.2134/agronmonogr60.2014.0056.5)
4. 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.
5. 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
6. 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
7. 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)

(* denotes graduate students)

1. Skakun, S., Wevers, J., Brockmann, C., Doxani, G., Aleksandrov, M., Batič, M., Frantz, D., Gascon, F., Gómez-Chova, L., Hagolle, O., López-Puigdollers, D., Louis, J., Lubej, M., Mateo-García, G., Osman, J., Peressutti, D., Pflug, B., Puc, J., Richter, R., Roger, J.-C., Scaramuzza, P., Vermote, E., Vesel, N., Zupanc, A., Žust, L. (2022). Cloud Mask Intercomparison eXercise (CMIX): An evaluation of cloud masking algorithms for Landsat 8 and Sentinel-2. **Remote Sensing of Environment**, 274, art. num. 112990. <https://doi.org/10.1016/j.rse.2022.112990>
2. Zhang, Y.*, Skakun, S., Adegbenro, M.O., & Ying, Q. (2022). Leveraging the use of labeled benchmark datasets for urban area change mapping and area estimation: a case study of the Washington DC–Baltimore region. **International Journal of Digital Earth**, <https://doi.org/10.1080/17538947.2022.2094001>
3. Prudente, V.H.R.*, Skakun, S., Oldoni, L.V., Xaud, H.A., Xaud, M.R., Adami, M., & Sanches, I.D.A. (2022). Multisensor approach to land use and land cover mapping in Brazilian Amazon. **ISPRS Journal of Photogrammetry and Remote Sensing**, 189, 95–109. <https://doi.org/10.1016/j.isprsjprs.2022.04.025>
4. Roger, J.-C., Vermote, E., Skakun, S., Murphy, E., Dubovik, O., Kalczynski, N., Korgo, B., & Holben, B. (2022). Aerosol models from the AERONET database: application to surface reflectance validation. **Atmospheric Measurement Techniques**, 15, 1123–1144. <https://doi.org/10.5194/amt-15-1123-2022>
5. Kerner, H. R., Sahajpal, R., Pai, D. B., Skakun, S., Puricelli, E., Hosseini, M., ... & Becker-Reshef, I. (2022). Phenological normalization can improve in-season classification of maize and soybean: A case study in the central US Corn Belt. **Science of Remote Sensing**, 6, art. num. 100059. <https://doi.org/10.1016/j.srs.2022.100059>
6. Franch, B., Cintas, J., Becker-Reshef, I., Sanchez-Torres, M. J., Roger, J., Skakun, S., Sobrino, J. A., Van Tricht, K., Degerickx, J., Gilliams, S., Koetz, B., Szantoi, Z., & Whitcraft, A. (2022) Global crop calendars of maize and wheat in the framework of the WorldCereal project. **GIScience & Remote Sensing**, 59(1), 885–913. <https://doi.org/10.1080/15481603.2022.2079273>
7. Huang, X., Fu, Y., Wang, J., Dong, J., Zheng, Y., Pan, B., Skakun, S., & Yuan, W. (2022). High-Resolution Mapping of Winter Cereals in Europe by Time Series Landsat and Sentinel Images for 2016–2020. **Remote Sensing**, 14(9), art. num. 2120. <https://doi.org/10.3390/rs14092120>
8. Skakun, S., Vermote, E. F., Artigas, A. E. S.*, Rountree, W. H., & Roger, J. C. (2021). An experimental sky-image-derived cloud validation dataset for Sentinel-2 and Landsat 8 satellites over NASA GSFC.

- International Journal of Applied Earth Observation and Geoinformation**, 95, art. num. 102253. <https://doi.org/10.1016/j.jag.2020.102253>
9. [Skakun, S.](#), Kalecinski, N.I., Brown, M.G.L. *, Johnson, D.M., Vermote, E.F., Roger, J.-C., & Franch, B. (2021). Assessing within-Field Corn and Soybean Yield Variability from WorldView-3, Planet, Sentinel-2, and Landsat 8 Satellite Imagery. **Remote Sensing**, 13, art. num. 872. <https://doi.org/10.3390/rs13050872>
 10. Villaescusa-Nadal, J.L. *, Vermote, E., Franch, B., Santamaría-Artigas, A.E., Roger, J.-C., & [Skakun, S.](#) (2021). MODIS-Based AVHRR Cloud and Snow Separation Algorithm. **IEEE Transactions on Geoscience and Remote Sensing**, 60, art. num. 5400513. <https://doi.org/10.1109/TGRS.2021.3059428>
 11. Shumilo, L. *, Lavreniuk, M., [Skakun, S.](#), Kussul, N. (2021). Is Soil Bonitet an Adequate Indicator for Agricultural Land Appraisal in Ukraine? **Sustainability**, 13, art. num. 12096. <https://doi.org/10.3390/su132112096>
 12. Franch, B., Bautista, A.S., Fita, D., Rubio, C., Tarrazó-Serrano, D., Sánchez, A., [Skakun, S.](#), Vermote, E., Becker-Reshef, I., Uris, A. (2021). Within-Field Rice Yield Estimation Based on Sentinel-2 Satellite Data. **Remote Sensing**, 13, art. num. 4095. <https://doi.org/10.3390/rs13204095>
 13. Franch, B., Vermote, E., [Skakun, S.](#), Santamaria-Artigas, A., Kalecinski, N., Roger, J.-C., Becker-Reshef, I., Barker, B., Justice, C., Sobrino, J.A. (2021). The ARYA Crop Yield Forecasting Algorithm: Application to the Main Wheat Exporting Countries. **International Journal of Applied Earth Observation and Geoinformation**, 104, art. num. 102552. <https://doi.org/10.1016/j.jag.2021.102552>
 14. Gutman, G., [Skakun, S.](#), Gitelson, A. (2021). Revisiting the Use of Red and Near-Infrared Reflectances in Vegetation Studies and Numerical Climate Models. **Science of Remote Sensing**, 4, art. num. 100025. <https://doi.org/10.1016/j.srs.2021.100025>
 15. Hall, J.V., Zibtsev, S.V., Giglio, L., [Skakun, S.](#), Myroniuk, V., Zhuravel, O., Goldammer, J. G., Kussul, N. (2021). Environmental and Political Implications of Underestimated Cropland Burning in Ukraine. **Environmental Research Letters**, 16(6), art. num. 064019. <https://doi.org/10.1088/1748-9326/abfc04>
 16. Gitelson, A., Arkebauer, T., Viña, A., [Skakun, S.](#), & Inoue Y. (2021). Evaluating plant photosynthetic traits via absorption coefficient in the photosynthetically active radiation region. **Remote Sensing of Environment**, 258, art. num. 112401. <https://doi.org/10.1016/j.rse.2021.112401>
 17. Santamaria-Artigas, A. *, Vermote, E.F., Franch, B., Roger, J.-C., & [Skakun, S.](#) (2021). Evaluation of the AVHRR surface reflectance long term data record between 1984 and 2011. **International Journal of Applied Earth Observation and Geoinformation**, 98, art. num. 102317. <https://doi.org/10.1016/j.jag.2021.102317>
 18. Huang, X., Reba, M., Coffin, A., Runkle, B. R., Huang, Y., Chapman, B., Ziniti, B., [Skakun, S.](#), Kraatz, S., Siqueira, P., & Torbick, N. (2021). Cropland mapping with L-band UAVSAR and development of NISAR products. **Remote Sensing of Environment**, 253, art. num. 112180. <https://doi.org/10.1016/j.rse.2020.112180>
 19. Vermote, E.F., [Skakun, S.](#), Becker-Reshef, I., & Saito, K. (2020). Remote Sensing of Coconut Trees in Tonga Using Very High Spatial Resolution WorldView-3 Data. **Remote Sensing**, 12(19), art. num. 3113.
 20. 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.
 21. 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.
 22. [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.
 23. [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.

24. 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
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PARTICIPATION AT CONFERENCES, WORKSHOPS, SEMINARS

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- Skakun S., Franch B., Roger J.-C., Vermote E., Justice C., Masek J. (2018) “**Combined Use of Landsat-8 and Sentinel-2 Data for Agricultural Monitoring**”, Japan Geoscience Union (JpGU) 2018 Conference (May 20-24, 2018) in Chiba, Japan (*invited presentation, oral*)

- 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*)
- Skakun, S., Roger, J.-C., Vermote, E., Franch, B., Becker-Reshef, I., Justice, C.O., & Masek, J.G. (2017). “Combined Use of Landsat-8 and Sentinel-2 Data for Agricultural Monitoring”, **American Geophysical Union (AGU) Fall Meeting 2017**, December 11–15, 2017, New Orleans, LA, USA (*invited presentation, oral*)
- Skakun, S. (2017) “Machine Learning and Remote Sensing – what’s going on?”, **GEOG Seminar Series**, November 30, 2017, College Park, MD (*oral*)
- Skakun, S., Roger, J. C., Vermote, E., Justice, C., & Masek, J. (2017). “Automatic Co-registration of Multi-Temporal Landsat-8/OLI and Sentinel-2A/MSI Images”, **IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2017**, 23–28 July 2017, Fort Worth, Texas, USA (*oral*)
- Roger, J.-C., Vermote, E., Skakun, S., Murphy, E., Holben, B., & Justice, C. (2017). “Evaluation of the Land Surface Reflectance Fundamental Climate Data Record”, **IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2017**, 23–28 July 2017, Fort Worth, Texas, USA (*oral*)
- Skakun, S., Vermote, E., Roger, J.-C., Franch, B., (2017). “Combination of Landsat-8 and Sentinel-2A for winter wheat yield assessment at a regional level”, **2017 LCLUC Spring Science Team Meeting and MuSLI Meeting**, 12–14 April 2017, Rockville, MD, USA (*poster*)
- Skakun, S., Kussul, N., Shelestov, A., Lavreniuk, M. (2017). “Agriculture monitoring in Ukraine with remote sensing”, **USDA Foreign Agriculture Service (FAS) Geospatial Data Sharing Seminar GDSS**, 21 February 2017, Washington DC (*invited talk, oral*)
- Skakun, S., Franch, B., Vermote, E., Roger, J. C., Becker Reshef, I., Justice, C. O., Masek, J. G., Murphy, E. (2016). “Fusion of multi-source remote sensing data for agriculture monitoring tasks”, **American Geophysical Union (AGU) Fall Meeting 2016**, December 12–16, 2016, San Francisco, CA, USA (*poster*)
- Skakun, S., Franch, B., Roger, J. C., Vermote, E., Becker-Reshef, I., Justice, C., & Santamaría-Artigas, A. (2016). “Incorporating Yearly Derived Winter Wheat Maps into Winter Wheat Yield Forecasting Model”, **IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2016**, 10–15 July 2016, Beijing, China (*oral*)
- Skakun S., et al. (2013). “UN-SPIDER RSO in Ukraine recommended practices on flood extent extraction and winter wheat yield forecasting”, **United Nations/Germany Expert Meeting on the Use of Space Based Information in Early Warning Systems**, 25-26 June 2013, Bonn, Germany (*invited presentation, oral*)
- 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*)
- Kussul N., Skakun S., Shelestov A., Kravchenko O., Gallego J.F., and Kussul O. (2012). “Crop area estimation in Ukraine using satellite data within the MARS project”, **IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2012**, 22-27 July, 2012, Munich, Germany (*oral*)
- Skakun S., et al. (2012). “Forecasting winter wheat yield in Ukraine using 3 different approaches,” **EC-JRC Geoland2 CROP CIS Technical Meeting**, May 14-15, 2012, Ispra, Italy (*oral*)
- Skakun S., et al. (2011). “The use of satellite data and geospatial intelligence for flood risk assessment at UN-SPIDER RSO in Ukraine”, **United Nations International Conference on Space-based Technologies for Disaster Risk Management**, November 22-25, 2011, Beijing, China (*oral*)

- Skakun S., et al. (2011). “Regression Models for Crop Yield Forecasting based on MODIS Data,” **EC-JRC CROP CIS Technical Meeting within Geoland-2 Forum**, September 13-15, 2011, Warsaw, Poland (*oral*)
- Skakun S., Kussul N., Shelestov A. (2008). “INTAS-CNES-NSAU Project: Data Fusion Grid Infrastructure”, **3rd ESA GRID & e-Collaboration Workshop for the Earth Science Community**, Jan. 16-17, 2008, ESA-ESRIN, Frascati, Italy (*invited presentation, oral*)
- Kussul, N., Skakun, S. (2004). “Neural network approach for user activity monitoring in computer networks”, **IEEE International Conference on Neural Networks**, Budapest; Hungary; 25-29 July 2004 (*poster*)

ADVISING

2021 – present	Gasmine Myers, MSc (Advisor)
2021 – present	Leonid Shumilo, PhD (Advisor)
2021 – present	Christian Abys, PhD (Advisor)
2021 – present	Meredith Brown, PhD (Advisor)
2020 – present	Abdul Qadir, PhD (Advisor)
2019 – present	Yiming Zhang, PhD (Advisor)
2021 – present	Katherine Melocik, PhD (Committee Member)
2021 – present	Tuo Feng, PhD (Committee Member)
2019 – present	Allison Baer, PhD (Committee Member)
2019 – present	Meghavi Prashnani, PhD (Committee Member)

Graduated students

2021 – 2022	Jaemin Eun, MS (Advisor; works as Faculty Specialist at UMD)
2020 – 2022	Alison Thieme, PhD (Committee Member)
2019 – 2021	Victor Prudente, Visiting PhD student, INPE, Brazil (Foreign Supervisor)
2018 – 2021	Andres Eduardo Santamaria Artigas, PhD (Committee Member; works as Post-Doc at UMD)
2018 – 2020	José Luis Villaescusa, PhD (Committee Member; works as Post-Doc at UMD)

AWARDS, HONORS & FELLOWSHIPS

2021	UMD Graduate Faculty Mentor of the Year Award
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 – 2020	IEEE Geoscience & Remote Sensing Society
2016 – 2020	American Geophysical Union (AGU)
2011 – 2020	Group on Earth Observations (GEO) Agricultural Monitoring Community of Practice
2013	IEEE Geoscience & Remote Sensing Society

SERVICE

Current

2020 – present Associate Editor, *Remote Sensing of Environment*
 2018 – present Task Coordinator of the *Cloud Masking Inter-comparison eXercise* (CMIX) within CEOS WGCV
 2021 – present Remote Sensing Teaching Team Lead
 2022 Reviewer and panelist for NASA (9 proposals reviewed)

Past

2021 Scientific Committee (as a reviewer) *IEEE/GRSS International Geoscience and Remote Sensing Symposium (IGARSS) 2021*
 2021 Reviewer: *IEEE Transactions on Geoscience and Remote Sensing* (1), *IEEE Geoscience and Remote Sensing Letters* (2)
 2021 Reviewer for the *National Research Foundation of Ukraine* (NRFU) (1 proposal reviewed)
 2018 – 2021 Editorial Board Member, section “*Remote Sensing Image Processing*”, journal *Remote Sensing*
 2020 Reviewer for the *National Research Foundation of Ukraine* (NRFU) (13 proposals reviewed)
 2020 Reviewer and panelist for NASA proposals (7 proposals reviewed)
 2020 Reviewer for international peer-reviewed journals *Remote Sensing of Environment* (1 paper), *Earth System Science Data* (1), *Remote Sensing* (1)
 2011 – 2020 Reviewer for international peer-reviewed journals *Remote Sensing of Environment*, *IEEE Transactions on Geoscience and Remote Sensing*, *IEEE Geoscience and Remote Sensing Letters*, *Remote Sensing Letters*, *Remote Sensing*, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, *International Journal of Remote Sensing*, *Sensors*, *Canadian Journal of Remote Sensing*, *Scientific Reports*, *Remote Sensing Applications: Society and Environment*, *PLOS ONE*
 2019 Reviewer of the project proposal for *Natural Environment Research Council* (NERC, UK)
 2018 – 2020 Member of the Symposia Working Group of the *UMD Year of Data Science* (YoDS) Initiative
 2017 – 2020 Associate Editor of the journal *AIMS Geosciences* (Section: Computing Sciences for Environment)
 2017 Reviewer of the project proposals for The Netherlands Organisation for Scientific Research (NWO)
 2017 Chair of the *IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017)* Sessions on “*Land Use Applications I*” and “*Land Use and Land Cover Mapping*” (July 23-28, 2017, Fort Worth, Texas, USA)
 2017 Reviewed a book proposal for the *Springer Publishing House*
 2016 Chair of the *IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2016)* Session on “*Remote Sensing for Agricultural Hydrology*” (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 *Elsevier Publishing House*
 2012 Scientific Secretary of the Third Conference on “*Earth Observations for Sustainable Development and Security (GEO-UA)*” (September 3-7, 2012, Crimea, Ukraine)
 2011, 2012 Referee for the *Regional Intel ISEF Competition in Ukraine* (Computer Science section)
 2010 – 2013 Expert of the *United Nations Platform for Space-based Information for Disaster Management and Emergency Response* (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: July 1, 2022