

Shukhrat SHOKIROV

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INTERESTS

Remote sensing, GIS, spatial analysis, statistical analysis and modelling, image processing

EDUCATION

- 03/2017 – 03/2021 **PhD**, Research School of Biology, The Australian National University (ANU), Canberra, Australia.
Research topic: Using multi-platform LiDAR to assess vegetation structure for woodland forest fauna
- 09/2014 – 07/2016 **MSc Geoinformatics**, with High Distinction, University of West Hungary (UWH), Szombathely, Hungary.
Thesis topic: Change detection in Fenyofo Forest Reserve based on multitemporal aerial images (High Distinction)
- 09/1998 – 06/2002 **BSc Geodesy and Cartography**, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (TIAME), Tashkent, Uzbekistan

EMPLOYMENT

- 08/2022 - Present **Postdoctoral Research Associate**, University of Maryland, USA.
Research projects: Estimating structural diversity of trees using terrestrial LiDAR. Calibration and validation of GEDI datasets using terrestrial and UAV LiDAR data.
- 01/2022 – 08/2022 **Lecturer**, Department of Geodesy and Geoinformatics, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers-National Research University.
Lecturer in Remote Sensing
- 01/2021 – 12/2021 **Postdoctoral research fellow**, Fenner School of Environment and Society, The Australian National University (ANU), Canberra, Australia.
Research topic: Investigating relationship between fire severity and live fuel moisture content using satellite imagery. Time series analysis of fuel moisture change using remote sensing datasets
- 07/2016 – 09/2016 **GIS Specialist (Intern), North-Transdanubian Water Directorate, Hungary**
- Conducted flood analysis using multi-temporal airborne laser scanning and multispectral aerial imagery data
 - Presented statistical information and delivered written reports about flood impacted areas by conducting spatial analysis
- 11/2011– 08/2013 **Trainer, Land Tenure Development Centre, (TIAME), Uzbekistan**
- Organized and delivered ArcGIS training courses for the university staff and students
 - Taught basic GIS skills such as data entry, geodatabase management, coordinate transformation and spatial analysis through the training courses
- Project Assistant, Geoinformatics: Enabling Sustainable Development in Uzbekistan, GE-UZ project, European Union – TEMPUS Program (ge-uz.eu), (TIAME), Uzbekistan**
- Managed daily project activities and tasks
 - Developed curricula for new Geoinformatics MSc course
 - Course developer in Remote Sensing
 - Utilized E-learning education management (Moodle platform)

- 06/2007 – 05/2011 **Engineer, Samarkand Aerial Geodesy Enterprise, Uzbekistan**
- Conducted geodetic surveys by Total Stations and GPS tools
 - Processed and analysed airborne imagery
 - Generated 3D models of landscapes with PHOTOMOD software
 - Created and updated maps with ARC/INFO (ESRI) software
- 01/2006 – 05/2007 **Technician, Design Company Sharqevroproyekt, Uzbekistan**
- Designed plans for new construction sites
 - Developed 2D & 3D drawings of construction buildings
- 08/2003 – 12/2005 **Farming and Agriculture insurance specialist, Uzagrosugurta, Kattakurgan, Uzbekistan**
- Creating maps of farmlands for insurance purposes
 - Calculating insurance quotes for agricultural crops and risk assessment
 - Providing professional advice

SCHOLARSHIP AWARDS

- 01/2018 – 03/2020 Postgraduate Research Scholarship, CSIRO, Australia
- 03/2017 – 08/2020 Higher Degree Research Fee Merit Scholarship, Australian National University, Australia
- 03/2017 – 08/2020 University Research Scholarship (International), Australian National University, Australia
- 09/2014 – 09/2016 Erasmus Mundus gSMART scholarship, MSc program, European Union
- 09/1998 – 06/2002 Uzbekistan Government Scholarship, B.Sc program, Uzbekistan

PUBLICATIONS

Peer-reviewed articles

- Shokirov S., Jucker T. et al. Using multiplatform LiDAR to identify relationships between vegetation structure and the abundance and diversity of woodland reptiles and amphibians. *Remote Sensing of Ecology and Conservation*. 2024. DOI: <https://doi.org/10.1002/rse2.381>
- Turner, R.S., Lasne, O.J.D., Youngentob, K.N., **Shokirov, S.**, Osmond, H.L. and Kruuk, L.E.B. Use of Airborne Laser Scanning to assess effects of understorey vegetation structure on nest-site selection and breeding performance in an Australian passerine bird. *Remote Sensing of Ecology and Conservation*. 2023. DOI: <https://doi.org/10.1002/rse2.342>
- Shokirov S.**, Jucker T., et al. Habitat highs and lows: Using terrestrial and UAV LiDAR for modeling avian species richness and abundance in a restored woodland. *Remote Sensing of Environment*. 285, 2023. DOI: <https://doi.org/10.1016/j.rse.2022.113326>
- Shokirov S.**, Levick S., et al. Multi-platform LiDAR approach for detecting coarse woody debris in a landscape with varied ground cover. *International Journal of Remote Sensing*. 42:24, 9316-9342, DOI: <https://doi.org/10.1080/01431161.2021.1995072>
- Shokirov S.**, Levick S., Jucker T., Youngentob K., Comparison of TLS and ULS data for wildlife habitat assessments in temperate woodlands, 2020 IEEE International Geoscience and Remote Sensing Symposium, Waikoloa, USA, 2020, pp. 6097-6100, DOI: <https://doi.org/10.1109/IGARSS39084.2020.9323451>
- Shokirov S.**, Király G., Analysis of multitemporal aerial images for Fenyőfő forest change detection. *Landscape & Environment* 10 (2) 2016. 89-100. DOI: <https://doi.org/10.21120/LE/10/2/4>

Textbook

Shukhrat S., Musaev, I., Akbarov, M. 2015. Masofadan Zondlash (Remote Sensing in Uzbek language). Iqtisodiyot va moliya (Economics and Finance, Tashkent Financial Institute), Tashkent, Uzbekistan

Manuscripts in preparation

Yebra M., **Shokirov S.**, et al. (In preparation). Validation of a high-resolution fuel moisture content product for Australia. *For submission to Remote Sensing*

Peer reviewing activities for journals

Restoration Ecology, Environmental Modelling and Assessment

Peer reviewing activities for conferences

Reviewer of the annual GIS in Central Asia (GISCA) conference

Fieldwork experience

I have extensive fieldwork experience in collecting ground information and terrestrial laser scanning data in Mulligan's Flat and Goorooyaroo nature reserves in Australia in 2017-2018.

I participated in the field campaign in tree inventory and terrestrial laser scanning data collection in Kruger National Park in South Africa from October to November 2023.

Conference participation

- Comparison of Terrestrial Laser Scanning Tree Segmentation Pipelines over Diverse Forest Types, Poster presentation, *AGU 2023 Fall meeting*. San Francisco, USA 2023
- Using Google Earth Engine to Assess Spatiotemporal Changes in Urban Vegetation Cover, GIS in Central Asia – GISCA 2022 and Geoinformatics – GI 2022 Annual International Scientific Conference on "Designing the geospatial ecosystem", Tashkent, Uzbekistan 2022 (**Keynote Speaker**)
- Multi-platform LiDAR approach for detecting coarse woody debris in a landscape with varied ground cover. Presented at the online GI 2021 conference in Tashkent, Uzbekistan 2022 (**Keynote speaker**)
- Comparison of TLS and ULS data for wildlife habitat assessments in temperate woodlands, 2020 IEEE International Geoscience and Remote Sensing Symposium, Waikoloa, USA, 2020
- Object based image analysis for forest health assessment. 7th GIS Conference and Exhibition; "Theory Meets Practice in GIS", University of Debrecen, Hungary 2016
- Assessment of pasture land degradation by Remote Sensing methods, Proceedings of the Annual Central Asia GIS Conference GISCA 2014: "Silk Road in space and time: the Urumqi node". Urumqi, China 2014