europass

OSMAN OSAMA AHMED IBRAHIM

Passport: P09803273 **Work permit:** Sudanese **Nationality:** Sudanese

Date of birth: 10/07/1993 **Place of birth:** Khartoum, Sudan **Gender:** Male

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LinkedIn: Osman O. A. Ibrahim

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Home: Ortahisar Değirmendere, Erzurum Yolu Cd. No:30, 61030, 61080 Trabzon (Turkey)

ABOUT MYSELF

Experienced senior surveying & geomatics engineer with over 8 years in geospatial analysis, remote sensing, and water resource management. Skilled in GIS, hydrological modeling, and satellite data interpretation for agricultural and infrastructure projects. Proven track record leading national and international projects with organizations like FAO, IFAD, and UNESCO. Currently contributing to innovative spatial solutions at the Hydraulics Research Center, Sudan. Holds a master's in geomatics engineering and certified in Python, QGIS, ArcPro, MATLAB, and remote sensing applications.

SKILLS

GIS and Remote Sensing Software

ArcMap / ERDAS / Idrisi / Envi / SNAP / QGIS / MapInfo / Google Earth Engine / Open-source Software Development / PostgreSQL Databases

Surveying Equipment & Data Collection Tools

Viva Station Leica / theodolite / Total station / Level / GPS Garmin / GPS RTK / Echo sounder / ADCP / ODK Collect

Hydraulic and Hydrological Modelling

HEC-GeoHMS / HEC-RAS / SOBEK / SWAT / WMS

Engineering Design

AutoCAD / Civil 3d

Project Management

Primavera Project Planner

Microsoft Office Packages

MS Office / Microsoft Word / Microsoft Excel / PowerPoint

operating system skills

Highly proficient at Windows / Linux

Programming Skills

R / Python

WORK EXPERIENCE

Hydraulics Research Center (HRC) – Ministry of Irrigation and Water Resources – Wad-Madani, Sudan

City: Wad-Madani | **Country:** Sudan | **Website:** https://hrc-sudan.sd/ | **Email:** info@hrc-sudan.sd | **Name of unit/department:** GIS and Remote Sensing Department - **Business/sector:** Agriculture, forestry and fishing

Teaching & Research Assistant

[01/10/2018 – Current]

- Conduct GIS and remote sensing analysis for water resources and irrigation projects.
- Develop spatial databases and apply machine and deep learning for crop mapping and yield estimation.
- Perform hydrological modeling and survey work using GPS, total station, ADCP, and remote sensing tools.
- Support national projects with FAO, IFAD, and other agencies on sustainable water management.
- Prepare technical reports and spatial data products to guide decision-making.
- Teach and supervise students and researchers in GIS, remote sensing, and surveying.
- Organize training sessions and seminars to build technical capacity.

Ministry of Infrastructure and Transport – Khartoum, Sudan

City: Khartoum | **Country:** Sudan | **Website:** https://rbdc.gov.sd/ | **Name of unit/department:** Surveying Department

Land surveyor

[01/08/2017 – 01/08/2018]

- Designed and reviewed road infrastructure plans, surveys, and tender documents.
- Conducted feasibility studies and supervised road construction and rehabilitation projects.
- Collected and analyzed survey data for roads and dams using total stations and GPS tools.
- Prepared technical reports, project documentation, cost estimates, and bills of quantities.
- Provided technical input for infrastructure planning and development.
- Coordinated with stakeholders, government agencies, and international organizations.

PROJECTS

[12/05/2023 – 15/07/2024]

GIS & Remote Sensing for Powered Water Management

Developing a comprehensive spatial and attribute database integrating remote sensing, field, and socio-economic data to support sustainable water management, irrigation optimization, and environmental monitoring in the Gezira Scheme.

Link: https://bit.ly/4jZsTs2

[02/01/2023 – 01/09/2024]

Remote Sensing–Based Monitoring and Yield Forecasting for the Gezira Irrigation Scheme (FAO Funded Project)

Used WaPOR and field data to produce monthly crop water use reports, yield forecasts, and infrastructure assessments. Improved monitoring by 15% and productivity by 9%. Applied SVM for crop classification and standardized field protocols.

Link: https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

[01/12/2019 – 20/04/2020]

Hydrology & Surveying for Catchment Management in South Darfur (ZOA Funded Project)

Conducted hydrological field surveys and catchment modeling to support infrastructure development and flood risk planning using rainfall, soil moisture, and streamflow data.

Link: http://bit.ly/45qDPeM

[26/10/2019 – 25/03/2020]

Sedimentation Survey and Analysis in Minor Canals of the Masalamia Major Canal

Conducted canal cross-sectional surveys, sediment transport analysis, and proposed dredging and slope stabilization measures to reduce siltation in the irrigation system.

Link: http://bit.ly/45qDPeM

[26/03/2019 – 15/07/2021]

Water Management and Productivity Assessment for Gash Irrigation Scheme (IFAD Funded Project)

Utilized modern surveying and GIS techniques to assess water infrastructure and agricultural productivity, modeled irrigation networks, and optimized water allocation strategies.

Link: http://bit.ly/45qDPeM

[13/11/2018 – 18/05/2021]

GIS-Based Crop Mapping for Gezira and Rahad Irrigation Schemes

Used satellite imagery and machine learning for crop classification and cultivated area estimation, enhancing accuracy and reducing time/cost over manual methods.

Link: http://bit.ly/45qDPeM

[12/12/2018 – 14/06/2020]

Nile Gauging Station Site Selection Upstream of High Aswan Dam

Conducted hydrographic and geomorphologic surveys to identify optimal locations for a Nile discharge gauging station; coordinated with Egyptian authorities and provided technical recommendations.

Link: http://bit.ly/45qDPeM

EDUCATION AND TRAINING

Master in Geomatics Engineering

KARADENIZ TECHNICAL UNIVERSITY [24/09/2022 – 03/10/2024]

City: Trabzon | **Country:** Turkey | **Website:** https://www.ktu.edu.tr/ | **Field(s) of study:** Agriculture, forestry, fisheries and veterinary: ● Crop and livestock production | **Final grade:** 3.50/4 | **Thesis:** The use of remote sensing for monitoring agricultural products in the Gezira Irrigation Scheme, Sudan

Link: https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

- Advanced application of **remote sensing and geospatial analysis** for agricultural monitoring.
- **Satellite image classification** using **Support Vector Machine (SVM)** and **Object-Based Image Analysis (OBIA)**.
- **Crop area estimation**, **yield prediction**, and **water productivity assessment** for wheat cultivation.
- Integration of **Sentinel-2 imagery**, **WaPOR (FAO)** data, and **Google Earth Engine** analytics.
- Use of **machine learning algorithms** including Random Forest, XGBoost, and Decision Trees for agronomic modeling.
- Development of irrigation performance indicators (equity, adequacy, uniformity) using spatial data.
- Field data collection and **ground-truth validation** of classification models.
- Proficient use of **ArcGIS Pro**, **eCognition**, **Python**, and **MS Excel** for spatial processing and statistical analysis.
- Contributed to **climate-resilient agriculture** and **UN Sustainable Development Goals (SDGs)** related to food security and water use efficiency.

B.Sc.Honours in Surveying Engineering

OMDURMAN ISLAMIC UNIVERSITY [14/07/2012 – 17/07/2017]

City: Khartoum | **Country:** Sudan | **Field(s) of study:** Geographic Information Systems Technology | **Final grade:** First Class | **Thesis:** Evaluating Roads within Omdurman Islamic University Utilising Geographic Information Systems Technology

LANGUAGE SKILLS

Mother tongue(s): Arabic

Other language(s):

English

LISTENING B2 **READING** C1 **WRITING** B1

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Turkish

LISTENING B2 **READING** B2 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

CERTIFICATIONS

[10/10/2023 – 06/12/2023]

Remote Sensing Image Acquisition, Analysis and Applications UNSW Sydney & IEEE Geoscience and Remote Sensing Society

Completed an advanced course on the principles and applications of remote sensing, including sensor types, satellite image acquisition techniques, spectral signatures, image interpretation, and data preprocessing. Gained hands-on experience in analyzing satellite data for environmental, agricultural, and urban applications using modern remote sensing workflows aligned with IEEE and academic standards.

Link: https://coursera.org/verif

[17/09/2023 – 11/11/2023]

Geospatial Analysis with ArcGIS University of California, Davis

Completed a comprehensive course on spatial data analysis using ArcGIS. Developed practical skills in spatial data management, coordinate systems, spatial joins, geoprocessing tools, raster analysis, and creating map layouts. Gained hands-on experience in solving real-world geospatial problems using industry-standard workflows in ArcGIS Desktop and ArcGIS Online environments.

Link: https://coursera.org/verif

[19/08/2023 – 16/11/2023]

Spatial Analysis and Satellite Imagery in a GIS University of Toronto

Completed a specialized course on integrating satellite imagery with GIS for spatial analysis. Gained practical skills in interpreting remote sensing data, performing raster-based analyses, and applying spatial statistics to real-world geographic problems. Emphasized the use of GIS tools for land cover classification, change detection, and environmental monitoring.

Link: https://www.coursera.org/account/accomplishments/verify/729AQRHDM2UW

[17/05/2023 – 06/12/2023]

Data Analysis with R Programming | Google

Completed a hands-on course focused on data analysis using R, covering data cleaning, visualization, statistical analysis, and data manipulation with tidyverse packages. Developed skills in generating insights from large datasets, writing reproducible scripts, and applying data-driven decision-making processes.

Link: https://www.coursera.org/account/accomplishments/verify/KJ4JQPDC2J52

[20/12/2020 – 11/03/2021]

Hydraulic Engineering in River Basins | Regional Training Center of the Hydraulics Research Institute

Completed an intensive training program focused on the design, modeling, and management of hydraulic systems in river basins. Covered topics such as flow dynamics, irrigation structures, watershed management, sediment transport, and flood control strategies. Gained practical skills in river engineering using fieldwork, simulation tools, and hydraulic design principles relevant to large-scale water infrastructure projects across Africa and the MENA region.

Link: https://drive.google.com/file/d/1Crq_bwviW13QAtYByUpjKDV9ORhUPIfl/view?usp=sharing

[06/09/2020 – 08/10/2020]

GIS & RS in WaPOR system | Hydraulics Research Center

Completed hands-on training on agricultural water productivity assessment using FAO's WaPOR database and open-source geospatial tools. Gained practical experience in accessing and analyzing evapotranspiration, biomass, and water productivity data for irrigation performance monitoring. Developed spatial analysis workflows for decision support in water resource planning and agricultural sustainability.

Link: https://drive.google.com/file/d/1y3Id-15QSpiNNJHyAUES1KEGcedxOfAN/view?usp=sharing

[24/09/2019 – 01/10/2019]

Python for GIS Development | PARIS Training Center

Completed specialized training on developing GIS tools and automating spatial workflows using Python. Covered key libraries such as arcpy, geopandas, and PyQGIS for spatial data handling, mapping, and geoprocessing. Applied scripting techniques to optimize geospatial analysis and improve productivity in GIS projects.

Link: https://drive.google.com/file/d/1oA1E_3bgPw4H7UBS90VXp2Os_2eJ5Chs/view?usp=sharing

[29/12/2019 – 07/01/2020]

Geographic Information System (GIS) using QGIS IOM–UN Migration, UNAMID, and WES Sudan

Successfully completed hands-on training on Geographic Information Systems using QGIS. Developed skills in spatial data creation, map design, coordinate systems, geoprocessing, and field data integration. The course emphasized open-source GIS workflows for humanitarian, environmental, and water-related applications, supported by international organizations including IOM and UNAMID.

Link: https://drive.google.com/file/d/1QWs0l12Cpd_8mn5zbROP09OiDhRYWQe9/view?usp=sharing

[19/03/2019 – 24/03/2019]

Basics of Remote Sensing and Essentials for Water Harvesting Applications UNESCO RCWH – Ministry of Water Resources, Sudan

Participated in a specialized training workshop focused on the foundational principles of remote sensing and its application to water harvesting and resource planning. Covered satellite data interpretation, terrain analysis, and hydrological mapping techniques relevant to sustainable water management in arid and semi-arid regions.

Link: https://drive.google.com/file/d/1y2x33J6_gLaR8pcNutdJTuvg75XBGxar/view?usp=sharing

[01/12/2018 – Current]

GIS, RS, and Surveying Technologies Hydraulics Research Center (HRC), Ministry of Irrigation and Water Resources – Sudan

Responsible for preparing and delivering technical training sessions for engineers and researchers on a range of geospatial and surveying topics, including:

- **Geographic Information Systems (GIS)**
- **Remote Sensing Techniques (RS)**
- **Land and Bathymetric Surveying** using Digital Level, GPS (Garmin & RTK), and Total Station
- Practical instruction on professional software tools such as:
- *ArcGIS, ERDAS Imagine, AutoCAD, Surfer, eCognition, GPS Utility, Global Mapper, Google Earth Pro, MapSource*

Recognized by the Director General of HRC for commitment and excellence in technical instruction and capacity building.

Link: https://drive.google.com/file/d/1SIr3CUoon4n8e70MjaER5qkWnFEXNVun/view?usp=sharing

[01/01/2024 – 20/03/2024]

Data Analysis with Python IBM

Completed a hands-on course on data analysis using Python. Topics covered include data wrangling, exploratory data analysis, statistical testing, and visualization using Pandas, Numpy, Matplotlib, and Seaborn. Developed practical skills in working with real datasets and applying analytical techniques for decision-making and reporting.

Link: https://www.coursera.org/account/accomplishments/verify/VCKACJAQ92VV

VOLUNTEERING

[23/04/2024 – 28/04/2024] Antalya, Türkiye

6th ICYF International Young Volunteers Camp – Post Disaster Psychosocial Support

Participated in an international youth development program focused on disaster response and psychosocial support for affected communities. Gained insights into volunteer coordination, resilience building, and mental health support strategies in post-disaster contexts. Engaged in cross-cultural team activities and training sessions aimed at empowering young leaders for humanitarian action.

Link: https://drive.google.com/file/d/1ILWhk-MxoRBwBLLH-xGdcXMQMMMPVlsH/view?usp=sharing

RECOMMENDATIONS

Name: **Volkan Yilmaz** | Assoc. Prof | Department of Geomatics Engineering |Karadeniz Technical University
Issued by: Assoc. Prof. Dr. Volkan Yılmaz
Chair of the Remote Sensing Division, Department of Geomatics Engineering
Institution: Karadeniz Technical University – Turkey
Date: 2024
E-mail: volkanyilmaz.jdz@ktu.edu.tr | **Phone number:** (+90) 4623772778

Link: https://drive.google.com/file/d/1DjeA-DGFRm3jkK51eEf6I1nGRz_SJotC/view?usp=sharing

Name: **Prof. Dr. Younis A. Gismalla** | Director General of Hydraulic Research Center (HRC) Sudan
Issued by: Assoc. Prof. Younis A. Gismalla, PhD
Title: Director, River Engineering and Dams Research Unit
Institution: Hydraulics Research Center (HRC), Sudan
Date: January 29, 2020
E-mail: hrs_younis@hotmail.com | **Phone number:** (+249) 912643490

Link: https://drive.google.com/file/d/1FszgaVNyNiSrbUwyh5ZNfztQ96jvpgXp/view?usp=sharing