Abdulrahman Hussein

(Environmental Remote Sensing, Hydrogeochemistry, & AgriTech)

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LinkedIn: linkedin.com/in/climatawy | **Location:** Kent, OH, USA | **Current Role:** Graduate Teaching Assistant, Kent State University

Summary of Qualifications

High-achieving **Graduate Teaching Assistant and PhD Student at Kent State University** with over 10 years of experience in **Advanced Sensing (AI/ML/Remote Sensing), Sustainable Agriculture, and Climate Adaptation**. Proven ability to secure competitive national and international research and project funding, totaling over **EGP 1.37 Million, USD 63,000+, and 10,000 ERU** to date. Expert in applying geochemical and spatial analysis principles to complex environmental challenges. Demonstrated success in higher education, supporting learning and academic integrity for over **1,600+ students** across undergraduate and graduate levels. Recognized as a high-potential researcher and entrepreneur, consistently winning funding and fully-funded international scholarships through rigorous proposal development and technical excellence.

Education

Kent State University | Kent, OH, USA

PhD Student, Earth Sciences | January 2023 – Present

- **GPA: 4.0 / 4.0**

Texas A&M University | College Station, TX, USA

USAID Egyptians Pioneers Scholarship (Climate Change Training) | October 2024

- Fully funded scholarship valued at **USD 50,000**; focused on climate policy and sustainability.

Aswan University | Aswan, Egypt

PhD Preparation Coursework, Soil Resources | September 2023 – June 2024

- **GPA: 4.0 / 5.0** | Fulfilled all required coursework for PhD candidacy.

Aswan University | Aswan, Egypt

Master of Science (MS), Natural Resources (Soils) | July 2023

- **GPA: 5.0 / 5.0 (Perfect Score)**

- Thesis: "Assessment of Potassium Status in Some Lands of Upper Egypt."

Aswan University | Aswan, Egypt

Postgraduate Diploma, Natural Resources | September 2018 – June 2019

- **GPA: 4.0 / 5.0**

Aswan University | Aswan, Egypt

Bachelor of Science (BS), Agriculture & Natural Resources | July 2016

- **GPA: 3.401 / 4.0** | **First Class Honors** (Ranked 1st in Department).

Professional Experience

Kent State University | Kent, OH, USA

Graduate Teaching Assistant | January 2023 – Present

- **Instruction & Support:** Supporting student learning for **121 students** over consecutive semesters (Spring 2026: 61 students; Fall 2025: 60 students).
- **Technical Mentorship:** Provided specialized guidance to a Master's student on **Sentinel-2 cloud masking** techniques and Python-based remote sensing workflows.
- **Research Integration:** Processing hyperspectral data for lab initiatives under Dr. Joseph Ortiz.

Agricultural Services Foundation | Upper Egypt

Consultant & Guest Lecturer (Smart Climate Agriculture & AI) | January 2023 – Present

- **Technical Training:** Deliver high-level technical lectures and workshops on AI adaptation and Smart Agriculture to **Agricultural Engineers, MS/PhD students, and Government Administrators**.
- **Strategic Advisory:** Serve as an expert consultant for government corporate representatives on empowering decision-making in Egyptian agriculture through advanced sensing and data-driven frameworks.

Agricultural Services (SAIL/IFAD) | Upper Egypt

AgriTech & Greenhouse Systems Consultant | January 2024 – Present

- **Technical Evaluation:** Authored recommendations for hydroponic/aquaponic systems and greenhouses; findings resulted in the **re-construction of study areas** to correct technical errors.
- **Training & Outreach:** Delivered workshops and climate-control sessions for **100+ farmers** in **3 local communities**.

Aswan University, Institute of African Research & Studies | Aswan, Egypt

Teaching Assistant (Affiliate Position) | December 2017 – Present

- **Examinations Control Room:** Oversight of grad-level exam integrity for **1,000+ students annually**.

- **Education Quality Unit:** Nominated member; developed custom checklists and logging systems to ensure institutional quality compliance.
- **Scientific Coordination:** Digital Coordinator for the Scientific Journal; managed records for **50+ research articles annually**.

AUC (American University in Cairo) & CARES Center | Cairo, Egypt

Agri-Entrepreneurship Professional Development Fellow | 2020 – 2021

- **National Selection:** Selected among the **top 25 candidates across Egypt** for a prestige career development program at CARES.
- **Funding Award:** Awarded **EGP 300,000** in excellence-based funding from AUC and HSBC Bank.

Aswan University, Faculty of Agriculture & Natural Resources | Aswan, Egypt

Assistant Lecturer (Permanent Faculty Track) | September 2016 – September 2019

- **Excellence-Based Appointment:** Hand-selected for high-excellence teaching role; subsequently appointed to a **permanent lifetime faculty track** based on academic merit.
- **High-Volume Mentorship:** Directly supported classes of **70+ students per semester** (500+ total students).

Research, Publications & Patents

Current Research Initiatives | Kent State University | January 2023 – Present

- **PhD Dual-Track Research:** Tracing pollution sources in neutralized lake systems (International cooperation with Rapan University, Iraq) and leading a 2-year funded UAV-based hyperspectral phenotyping study.
- **Lead Researcher – Toshka Project:** Utilizing **EnMAP** (Exclusive Mission Tasking) and **NISAR** (NASA's newest sensor) for novel soil moisture and salinity detection.
- **Python Framework Development:** Automated Stepwise Regression for lab workflows and developed custom algorithms for Sentinel-2 cloud masking.

Journal Publications

- **تأثير بعض خواص التربة علي انطالق عنصر البوتاسيوم في** (2023). Ahmed Hussein, & Abdulrahman Rabee. بعض أراضي مصر العليا) Potassium release as affected by some indigenous soil properties in Upper Egypt). مجلة المعهد العالي للدراسات النوعية, 3(1), 915-940.

Patents

- Hussein, F.M., Hussein, F.M. **"Smart Pot."** Egypt Patent, No 196/2023. (Filed: 05 Feb 2023).

Presentations & Invited Lectures

- **Invited Lecture** | "From Vision to Reality: AI and Empowering Decision Making in Agriculture" | Agricultural Services Foundation (2025).
- **Guest Expert – Smart Climate Agriculture** | Channel 8 – Egyptian National Television (2025).

- **Invited Lecture** | "Smart Agriculture and AI Adaptation in Egypt" | Agricultural Services Foundation (2025).
- **TED X Speaker** | "Turning Challenges Into Opportunities" (2024).
- **Invited Lecture** | "Challenges and Innovations in Managing Egyptian Soils" | Agricultural Services Foundation (2024).
- **Invited Lecture** | "Soil Management in Aswan: Problems, Solutions, and Modern Techniques" | Agricultural Services Foundation (2024).
- **Field Presentation** | "Sustainable Soil Management & Fertilization for Date Palm Cultivation" | Abu El-Reesh Association (2024).
- **Special Guest** | German Science Day by COSMINEA and DAAD (2024).
- **Workshop Lead** | "Artificial Intelligence: Innovation and Application" (2024).
- **Workshop Lead** | "Be the Tech Guy: Arduino and Microcontrollers" (2022).

Honors & Awards (Funded & Competitive)

- **SIRDS Project Grant (EU-Funded):** Secured **EGP 900,000** for community development and sustainable agriculture. (2025)
- **Startup Power Competition – Abu Hashima Foundation:** Secured **12th place (out of 4,000+)** and **1st in Agritech & AI** for Planty. Awarded **EGP 100,000**. (2025)
- **AI Hackathon (Aswan University & Google): 1st Place (Agritech)**; Awarded **EGP 30,000 incubation** and **USD 3,000** in Google AI services. (2025)
- **Upper Egypt Gemini Africa Incubator:** Selected for **EGP 30,000** incubation program for Planty. Featured as primary visual representation on official website. (2025)
- **Upper Egypt Startup Olympics – Aswan University:** Secured **2nd Place** overall; Awarded **EGP 15,000** in funding. (2025)
- **USAID Egyptians Pioneers Scholarship:** Awarded **USD 50,000** for training at Texas A&M. (2024)
- **National Initiative for Smart Green Projects: 1st Place winner** (Aswan Governorate) for two consecutive years. (2023–2024)
- **Aswan University TIEC Competition:** Winner for best innovation ideas and patent registration support. (2023)
- **King Abdulaziz University (KAU) PhD Scholarship:** Fully-funded PhD track offer (Ranked **102 globally / Top 1.2%**). (2023)
- **Athar Accelerator & USAID Climate Grant:** Selected for **USD 10,000 Accelerator** and won **1st place in Climate Hackathon**. (2023)
- **Crossroads Emerging Leaders Program:** Competitively selected and fully funded participant (Acceptance rate <5%). (2020)
- **King Fahd University (KFUPM) Scholarship:** Fully funded offer for Soil Science research. (2020)
- **GREAT-RAU Scholarship (UK):** Awarded **10,000 ERU**; Full tuition scholarship offer for Royal Agricultural University. (2020)
- **AUC & HSBC Excellence Grant:** Awarded **EGP 300,000** for CARES Professional Career Program. (2020)

Technical Skills & Training

Core Research Areas:

- **Sustainable Agriculture:** Smart Climate Agriculture, Soil Fertility, Climate Change Adaptation, Precision Farming, Aquaponics/Hydroponics.
- **Environmental Remote Sensing Diagnostics:** Geochemical Tracing, Stable Isotopes ($\delta^{34}S$), XRD/XRF Principles, Water Quality Assessment, Multivariate Statistics (PCA, HCA).

Professional Development:

- **Early Career Researchers Academy – EKB & Clarivate** (Dec 2025): 6-month intensive program (21 modules).

Remote Sensing & Data:

- **Sensors: NISAR (SAR)**, **EnMAP (Hyperspectral)**, UAV Hyperspectral, ECOSTRESS, NASA Earthdata, TIR.
- **Software: QGIS**, Python (ML/Data Fusion), R, MATLAB, ArcGIS, SPSS, R Studio, Fusion 360, WordPress, Blynk.

Community Service

- **Volunteer & Co-Organizer | Hayah Karima Presidential Institution (2022–Present)**
- **Volunteer, Public Relations | Balanah Society Development Association (2018–Present)**

Languages & Verifications

- **Languages:** Arabic (Native), **English: B2 (Upper Intermediate)** – Duolingo Score: 125.
- **Certifications:** [Credly Digital Badge Profile](#)

References

- Available upon request.