



AVIZIT BISWAS

Water & Environmental Researcher | GIS & Remote Sensing Analyst | Digital Marketing & Content

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English (C1) • German (A2) • Bengali (Native) • Open to: Internship / Werkstudent — Water, Environmental & GIS roles

PROFESSIONAL SUMMARY

MSc candidate in Integrated Water Resources Management (TH Köln) with hands-on research and technical experience in water quality assessment, hydrology, wastewater management, GIS (QGIS, ArcGIS), remote sensing (Google Earth Engine), and AI-driven drone/river monitoring systems. Author/co-author of 6 peer-reviewed publications on river, surface- and wastewater quality, with one further study currently under review. DWA student member and IFAT Munich 2026 attendee, actively engaged with the water and environmental sector. Complemented by 6+ years of digital marketing, SEO, and content experience, bringing strong communication skills for translating technical and environmental topics into clear, engaging content. Seeking an internship / Werk student position in Water & Wastewater Engineering, Environmental Technology, Sustainable Infrastructure, or GIS & Remote Sensing.

KEY SKILLS

Water & Environmental	Water quality monitoring & analysis (pH, DO, BOD, COD, TDS, EC, turbidity), Water Quality Index (WQI), mass-balance modelling, hydrology, wastewater management, river hydromorphology assessment (LAWA-OS, RiverVision)
GIS & Remote Sensing	QGIS, ArcGIS / ArcGIS Pro, Google Earth Engine, Drone2Map, UAV/drone mapping & georeferencing, LULC analysis, spatial & WQI mapping
Data, AI & Programming	Python (pandas, matplotlib, scipy), YOLO/YOLOv8, RT-DETR, ByteTrack object tracking, SPSS, agentic AI workflows (Claude Code, Google Antigravity, MCP), correlation & regression analysis
Digital Marketing	SEO, content creation & copywriting, social media management, Google Ads & Analytics, WordPress, Canva, email marketing, B2B lead generation
Tools & Languages	MS Office, Google Workspace, PowerPoint; English (C1), German (A2), Bengali (native)

FEATURED WATER & RESEARCH PROJECTS

AI-Driven River Feature Inventory Agent — Drone-Based Hydromorphological Mapping (YOLO + ByteTrack)Mar 2026 – Present
Independent research project, Cologne, Germany

- Built an agentic AI system that converts drone imagery/video of river corridors into a deduplicated, geo-referenced inventory of instream wood (fallen trees, leaning trees, log jams, stumps) for river restoration and flood-risk monitoring.
- Combined a YOLO detection backbone with ByteTrack persistent-ID tracking to eliminate double-counting across frames; georeferenced every detection to WGS84 coordinates using UAV telemetry and camera intrinsics.
- Developed an agent-in-the-loop pipeline in Google Antigravity with Claude Code orchestration and a custom YOLO MCP server, producing GIS-ready JSON and Excel inventories for hydromorphologists.

AI-Supported River Hydromorphology Mapping & Field-Based River Habitat Assessment — Erft RiverSep 2025 – Feb 2026
MSc coursework, TH Köln — Cologne University of Applied Sciences

- Combined drone imagery, GIS, image annotation, and machine learning (YOLOv8, RT-DETR, MATLAB CNN, Supervisely, Roboflow, QGIS) to identify hydromorphological features along the Erft River.
- Conducted field-based river habitat assessment using the LAWA-OS framework and RiverVision, documenting channel morphology, bank structure, substrate, and vegetation; compiled results into an interactive ArcGIS dashboard.

Water Quality & Hydrological Assessment of the Bhairab River using GIS, Python & Remote SensingJan 2024 – Mar 2025
Research project, Khulna, Bangladesh — published in Journal of Civil Engineering and Materials Application

- Assessed water quality (pH, TDS, EC, BOD, COD, dissolved oxygen) and river mass balance / self-purification capacity using correlation and regression methods.
- Mapped the Water Quality Index (WQI) spatially with QGIS and ArcGIS, and applied Google Earth Engine-based land use/land cover (LULC) analysis to assess anthropogenic impacts.
- Performed statistical and multivariate trend analysis in Python (pandas, matplotlib, scipy); findings published as peer-reviewed research (March 2025).

PUBLICATIONS & RESEARCH

Author / co-author of 6 peer-reviewed publications on water quality, hydrology, and environmental management, plus one study currently under review — demonstrating strong desk-research, field-data and technical-writing skills.

Coagulation-Flocculation Treatment of Industrially and Agriculturally Contaminated Surface Water in the Mayur River Corridor, Khulna District, Bangladesh: Parametric Removal Efficiency, Dose Optimization, and River Pollution Index Assessment **2026 (Under Review)**
Avizit Biswas

Construction & Demolition (C&D) Waste Generation and Recycling Management Protocol of Bangladesh **2025**
Avizit Biswas | IJISRT, Vol. 10, Issue 9 | DOI: 10.38124/ijisrt/25sep1419

Evaluating Domestic Wastewater Quality in Khulna City Using Correlation Analysis between Electrical Conductivity and Total Dissolved Solids **2025**
Avizit Biswas | JCEMA, Vol. 8, Issue 3 | DOI: 10.22034/jcema.2025.488900.1147

Investigating River Water Quality Parameters: A Case Study in Khulna City **2024**
M. Asadujjaman, Avizit Biswas | JCEMA, Vol. 7, Issue 4 | DOI: 10.22034/jcema.2023.420907.1124

A Comprehensive Assessment of Water Quality and Mass Balance of the Bhairab River, Khulna **2023**
Md. Mahadi Hashan, Avizit Biswas | IJRASET, Vol. 11, Issue XII | DOI: 10.22214/ijraset.2023.57816

Assessment of Surface Water Quality Using the Water Quality Index (WQI): A Case Study of the Dharatana River, Bagerhat **2023**
M. Asadujjaman, Avizit Biswas | Zenodo, Vol. 8, Issue 5 | DOI: 10.5281/zenodo.8086088

EDUCATION

M.Sc. Integrated Water Resources Management (IWRM) <i>TH Köln — Cologne University of Applied Sciences, Cologne, Germany</i> - Focus: hydrology, water quality monitoring, environmental impact assessment, GIS-based spatial analysis, and sustainable water infrastructure. - Technical tools: QGIS, Google Earth Engine, Python, ArcGIS DroneMap. Activities: DWA Student Member; IFAT Munich 2026 Attendee.	Sep 2024 – Present
B.Sc. Civil Engineering <i>North Western University, Khulna, Bangladesh — CGPA: 3.43 / 4.00</i> - Focus: environmental engineering, water resources engineering (hydraulics, hydrology, irrigation & drainage), geotechnical and structural engineering. - Thesis: Assessment of Surface Water Quality Using the Water Quality Index (WQI) — A Case Study of the Dharatana River, Bagerhat.	Jan 2019 – Apr 2023
Higher Secondary Certificate (HSC), Science <i>Khulna Public College, Khulna, Bangladesh — GPA: 4.33 / 5.00</i>	2015 – 2017
Secondary School Certificate (SSC) <i>Kalia Pilot High School, Narail, Bangladesh — GPA: 4.89 / 5.00</i>	2010 – 2015

PROFESSIONAL EXPERIENCE — DIGITAL MARKETING & CONTENT

Freelance Digital Specialist (SEO & Content) — Fiverr & Upwork <i>Remote — undertaken alongside BSc and MSc studies</i> - Delivered 130+ SEO, content, and digital-marketing projects across diverse industries (1,400+ logged hours) for international clients. - Conducted keyword research, competitor analysis, on-page SEO audits, and white-hat link building; produced optimized web, blog, and social media content.	Feb 2019 – Jun 2025
Senior Digital Marketer (Remote) <i>Headphone Shop — Heidelberg, Germany</i> Planned and executed SEO and digital-marketing campaigns that grew organic traffic by 300% and sales by 200%, while monitoring analytics to refine performance.	Feb 2022 – Jun 2023
SEO Specialist & Content Optimiser (Remote) <i>PQ Design Studio — Pisa, Italy</i> Optimized website content, meta titles, and backlinks using white-hat SEO best practices to improve search rankings and lead generation.	Sep 2023 – Mar 2024
Marketing Manager & Website Designer (Remote) <i>Friendly Fur Berlin — Berlin, Germany</i> Managed marketing, social media, and website content; conducted keyword research and competitor analysis contributing to measurable sales growth.	Jan 2021 – Dec 2021

CERTIFICATIONS

Water, GIS & Sustainability

Certification	Issuer	Date
Real-World GIS	LinkedIn Learning	Aug 2025
Learning QGIS	LinkedIn Learning	Aug 2025
Drone Analysis with Drone2Map & ArcGIS Online	LinkedIn Learning	Aug 2025
Sustainability Strategies	LinkedIn Learning	Aug 2025
Data & AI Literacy (LLMs, RAG, Prompt Engineering, AI Ethics)	TH Köln	Aug 2025
Einführung in die KI (Introduction to AI)	AI Campus	Sep 2025

Digital Marketing

Certification	Issuer	Date
LinkedIn Marketing Strategy	LinkedIn	Apr 2025 – Apr 2027
LinkedIn Marketing Solutions Fundamentals	LinkedIn	Apr 2025 – Apr 2027
Digital Marketing (SEO, Content, Social, Email, Ads, Analytics)	LEDP	Oct 2020
The Fundamentals of Digital Marketing	Google	Apr 2020
Google Ads (Search, Display, Video, Shopping) & Analytics Individual Qualification	Google	2020
Grow Offline Sales Certification	Google Digital Academy	Oct 2022

Language: IELTS (English) — IDP Education, Feb 2024

MEMBERSHIPS & ACTIVITIES

- DWA Student Member — Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall (German Association for Water, Wastewater and Waste).
- IFAT Munich 2026 Attendee — world's leading trade fair for water, sewage, waste & raw materials management (60th anniversary); engaged with Xylem, Grünbeck AG, Wavin, DRAGFLOW, Atlas Copco, and HCP Pump on sensor, treatment, and pump technologies.
- Open to: internship / Werkstudent opportunities in Water & Wastewater Engineering, Environmental Technology, Sustainable Infrastructure, and GIS & Remote Sensing.