

AHMAD IBRAHIM TOLBA KHEDR

GIS & Stormwater Network Specialist | InfraWizard Specialist | GOPP Expert Assistant | Infrastructure GIS

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PROFESSIONAL SUMMARY

GIS and stormwater network specialist with 5+ years of experience in infrastructure GIS, CAD-to-GIS conversion, InfraWizard-based stormwater and groundwater reduction network preparation, dewatering systems, hydrological drafting support, and engineering deliverables. Experienced in building drainage and groundwater networks from survey data, SewerGEMS/StormCAD outputs, CAD drawings, and GIS datasets, with deliverables including PDF layouts, CAD drawings, GIS geodatabases/shapefiles, KML files, profiles, summaries, and surface/DEM outputs. Registered as a GOPP Expert Assistant, with practical project experience in Egypt and Saudi Arabia, especially Jeddah stormwater, groundwater control, urgent drainage solutions, and alternative drainage routes.

SPECIALIZED EXPERTISE

InfraWizard Stormwater & Groundwater Networks Manual network building, structure/pipe setup, profile extraction, network coloring, layout preparation, and practical handling of InfraWizard limitations.	Survey-to-Network Workflows Converting field survey levels, coordinates, pipe diameters, materials, ground levels, invert levels, and depths into structured drainage network models.
SewerGEMS / StormCAD Data Preparation Extracting and cleaning FlexTable outputs, preparing shapefiles, separating pipe diameter and material fields, and resolving data formats before InfraWizard import.	Network Review & QA/QC Support Checking negative slopes, invert/ground level consistency, pipe sizes, naming conventions, depth values, protection requirements, and engineering presentation quality.
GIS / CAD / KML Deliverables Preparing geodatabases, shapefiles, CAD drawings, KML files, PDF layouts, network summaries, and map outputs for engineering teams and clients.	Surface & Raster Preparation Generating road/survey-based surfaces from points and centerline/edge data, preparing TIF raster surfaces for use in Civil 3D, SewerGEMS, StormCAD, ICM, and related modeling workflows.

CORE TECHNICAL SKILLS

- GIS & Spatial Analysis:** ArcGIS, QGIS, geodatabase design, spatial analysis, map production, terrain/DEM analysis, shapefile/KML handling.
- Stormwater & Groundwater:** Stormwater drainage networks, groundwater reduction networks, dewatering systems, urgent drainage solutions, alternative drainage routes, hydrological report support.
- InfraWizard & Engineering Data:** InfraWizard network preparation, SewerGEMS/StormCAD data preparation, FlexTable cleanup, pipe/manhole attributes, profiles, summaries, layouts.
- CAD & Civil 3D Support:** AutoCAD 2D, Civil 3D layout support, CAD-to-GIS conversion, utility networks, engineering plans, profiles, basic surface extraction.
- Data, Automation & Documentation:** Excel, data cleaning, technical documentation, workflow improvement, AI-assisted GIS problem solving and automation concepts.

SOFTWARE / TOOLS & LANGUAGES

- Software / Tools:** InfraWizard, ArcGIS/ArcMap, ArcGIS Pro, QGIS, AutoCAD, Civil 3D, SewerGEMS/StormCAD data preparation, SAS Planet, Excel, KML, Shapefiles, and Geodatabases.
- Languages:** Arabic: Native | English: Basic - able to read technical GIS/CAD terms and use software interfaces with support from translation tools.

SOFTWARE TOOLS DEVELOPMENT (2026)

Developed a set of practical GIS, CAD, PDF plotting, data transfer, and stormwater-network automation tools in 2026 to support mapping, infrastructure data preparation, file handling, and workflow improvement.

- Atlas of Egyptian Curriculums Maps App:** Developed a maps application for Egyptian curriculum atlas and map workflows.
- DropAndCopy:** Developed a file handling tool to support faster copy/drop workflows during daily project organization.
- GIS Data Repositories Professional 2026:** Developed a structured GIS data repository package for professional 2026 GIS project organization.
- Qtra Pipe Auto Run:** Developed an automation tool for pipe-related workflow execution and repetitive infrastructure processing steps.
- RoboTransfer:** Developed an automation utility for transferring files and project outputs between working locations.
- Smart Plot PDF:** Developed a PDF plotting/export support tool for faster map and layout production.
- SmartCalculator:** Developed a calculation utility to support repeated technical and data-processing calculations.
- SmartGully:** Developed a tool supporting stormwater gully-related workflows and drainage network preparation tasks.
- Text File to Storm Network Shapefile Toolbox v1.8:** Developed a toolbox for converting text-file storm network data into shapefile outputs for GIS and stormwater workflows.

PROFESSIONAL EXPERIENCE

GIS Specialist & Hydrological Drafting Specialist | Vision Dimensions Engineering Consultancy Oct 2021 - Dec 2024

- Built and prepared stormwater drainage and groundwater reduction networks using InfraWizard based on survey data, pipe diameters, materials, ground levels, invert levels, and engineering constraints.
- Converted CAD drawings, field survey outputs, and engineering model exports into structured GIS datasets, shapefiles, geodatabases, KML files, CAD outputs, and PDF layouts.
- Prepared InfraWizard-ready data from SewerGEMS/StormCAD outputs, including FlexTable extraction, field cleanup, pipe size/material separation, and shapefile processing before import.
- Reviewed stormwater and groundwater networks for negative slopes, depth/invert consistency, pipe diameter suitability, naming quality, protection requirements, and presentation standards.

- Prepared engineering plans, profiles, network summaries, viewports, layouts, and technical mapping outputs for urgent drainage solutions, alternative routes, and groundwater control projects.
- Generated survey/road-based surfaces and raster TIF outputs from point data and road centerline/edge levels to support hydraulic modeling and Civil 3D/GIS workflows.
- Supported hydrological report preparation through data collection, spatial analysis, map production, technical documentation, and workflow improvement.

Freelance GIS Specialist | Independent Projects Jan 2020 - Oct 2021

- Delivered GIS and mapping support for infrastructure network projects including electricity, gas, sewage, and utility networks.
- Prepared maps and spatial outputs for master's and doctoral theses, academic research, and registered geographical atlases.
- Conducted GIS training sessions and supported learners in practical map production, terrain analysis, and remote sensing workflows.

SELECTED PROJECT EXPERIENCE

- **Stormwater & Groundwater Network Projects - Jeddah, KSA:** Supported and prepared dozens of urgent drainage solutions, alternative drainage routes, groundwater reduction lines, and stormwater layouts using InfraWizard, GIS, CAD, KML, and PDF deliverables.
- **AL Jawaharah Mall Stormwater Drainage Network - Jeddah, KSA:** Prepared stormwater drainage layout support including manholes, catch basins, pipe diameters, slopes, invert levels, depths, coordinates, overflow pipes, and network summary outputs.
- **Groundwater Network Survey Project - Jeddah, KSA (2022):** Developed and managed GIS/CAD datasets for groundwater and drainage networks, including survey data conversion, plan extraction, and engineering profile preparation.
- **Stormwater Drainage Networks - Jeddah Municipality (2023):** Contributed to network drafting and GIS support across multiple planning zones, including Plans 583/G/S, 654/G/S, 677/G/S, 679/G/S, 680/G/S, 681/G/S, 682/G/S, 683/G/S, 704/G/S, 705/G/S, and 718/G/S.
- **Groundwater Control & Dewatering Systems - Jeddah, KSA:** Prepared drafting and GIS support for commercial, residential, and infrastructure dewatering projects in Alruwais, Alhamraa, Alkhalidiah, Alaziziah, Alasalah, and other districts.
- **Flood Protection for Wadi Laban - Riyadh, KSA:** Supported mapping, drafting, and engineering documentation related to flood protection works.
- **CAD-to-GIS Electrical Plans - Jeddah, KSA:** Converted electrical plans from CAD files into GIS databases, including Plans 675, 679, and 680.
- **Climate Resilient ICZM Plan for the North Coast of Egypt (2023):** Contributed GIS and mapping support to climate-resilient integrated coastal zone management documentation.

PUBLICATIONS & SCIENTIFIC CONTRIBUTIONS

- Authored **Atlas of Egypt, the Arab World and the World**, registered with the National Library and Archives of Egypt under Local Deposit No. 2021/20535 and ISBN 9789779095615.
- Authored **Atlas of the World and the Arab World**, registered with the National Library and Archives of Egypt under Local Deposit No. 2022/15361 and ISBN 9789779425962.
- Authored **Atlas of Geography of Egypt**, registered with the National Library and Archives of Egypt under Local Deposit No. 2022/15362 and ISBN 9789779425979.
- Authored **Atlas of Geography of Development**, registered with the National Library and Archives of Egypt under Local Deposit No. 2022/15363 and ISBN 9789779425986.
- Authored **Atlas of Political Geography**, registered with the National Library and Archives of Egypt under Local Deposit No. 2022/15364 and ISBN 9789779425993.
- Authored **Atlas of Blank Maps**, registered with the National Library and Archives of Egypt under Local Deposit No. 2022/15365 and ISBN 9789779426006.
- Reviewed **the 2020 edition of the World Atlas**, produced by Dar Al-Irshad, Cairo Branch.
- **Participated in producing the Atlas of the Nile Basin Countries - Geological Aspect** at the Maps and GIS Division, Department of Geography, Faculty of Arts, Cairo University, 2018.
- Prepared maps for several scientific research papers, master's theses, and doctoral dissertations.
- One year of experience delivering GIS and remote sensing training sessions.
- Delivered online training sessions via Zoom in 2021 on GIS applications, including slope aspect mapping, surface roughness mapping, local elevation mapping, and alternative terrain shadow mapping techniques.

EDUCATION

Bachelor of Arts in Geography, Maps & Geographic Information Systems Specialization | Faculty of Arts, Cairo University | May 2018

TRAINING COURSES

- Planning and Geographic Information Systems Course | May 1, 2024 - August 30, 2024.
- Geomatics Course | Research and Training Center, Ain Shams University | July 10, 2017 - August 17, 2017.
- Introduction to Remote Sensing | National Authority for Remote Sensing and Space Sciences | August 21-25, 2016.
- Surveying Course | African Center for Surveying Services (ACSS) | August 2016.