

MUHAMMAD SOHAIL AKBAR

- Master of Science in Geographic Information Systems (MSCGIS)
- Master of Science in Computer Science
- Total Experience: 14 years
- Currently Working: Wedo Solutions KSA
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PERSONAL SUMMARY:

With over **14 years of hands-on experience** in the GIS field, I specialize in crafting geospatial solutions that transform complex spatial data into actionable insights. My expertise spans the full GIS lifecycle, from designing **web GIS systems** and building **PostGIS databases**, to deploying **real-time dashboards** and **automating spatial workflows**.

Currently working in **Saudi Arabia** on national-scale GIS initiatives, I've led projects for **REGA, MOMRA**, and **Hajj operations**, delivering advanced dashboards, QGIS plugin and models like rental hotspot scores, infrastructure impact analysis, and POI-driven map services. Known for bridging **GIS, backend development, and data strategy**, I thrive at the intersection of spatial intelligence and smart decision-making.

As a results-driven GIS analyst and developer, I combine **technical depth, strategic clarity**, and a continuous learning mindset to deliver future-ready geospatial solutions.

PROFESSIONAL PROJECTS HIGHLIGHTS:

- Designed and implemented REGA's Rental Hotspot Score Model with PostgreSQL/PostGIS, integrating rent trends, lease volumes, and POI-based infrastructure scoring.
- Built a Hajj POI GeoSystem for Makkah, optimized for mobile via GeoServer and Balady SDK.
- Supported MOMRA projects with spatial data pipelines, GIS analysis, and stakeholder dashboards.
- GIS-based Land Records ERP for DHA, Pak Army, streamlining ownership verification and property mapping.
- Led the Pakistan Punjab Government's Land Record Management System (MIS + GIS) for digital cadastral management.
- Designed a COVID-19 Planning Tool integrating GIS, MIS, and mobile tech for tracking passengers, NGOs, and patient flows.
- Built a Price Control Monitoring System using GIS for province-wide real-time pricing oversight.
- Supervised Rural Roads Infrastructure Program (2015–17) under Khadim-e-Punjab initiative.
- Developed an Urban Immovable Property Tax System to improve urban revenue collection through spatial data integration.
- Designed a Disease & Vector Surveillance Dashboard for proactive health interventions.

- Created the Transport Infrastructure Management System to support planning and maintenance across Punjab.
- Managed WASA Consumer Survey (GIS + Android) for improving municipal water services.
- Led the Punjab Healthcare Commission Survey using GIS/Android tools for regulatory inspection.
- Delivered a province-wide Land Use Survey to support planning, zoning, and investment decisions.
- Implemented SMS-based Wheat Procurement & Payment System to improve transparency and farmer trust.
- Developed SMS-based Attendance System for the Literacy & NFBE Department.
- Oversaw Flood Damage Assessment Surveys (2014–15) using GIS and mobile tools for disaster relief.

WORK EXPERIENCE

Information Systems Analyst

Wedo Solutions, Riyadh, Saudi Arabia

Nov 2024 – Present

- Leading national GIS initiatives for government clients including the Real Estate General Authority (REGA), Ministry of Municipal Affairs (MOMRA), and Hajj operations support
- Designed and implemented a dynamic rental hotspot scoring model using PostgreSQL/PostGIS for real estate trend analysis and decision-making
- Built a high-performance POI-based system for Makkah using GeoServer and Balady SDK, optimized for smart city dashboards and mobile mapping
- Developed custom QGIS plugins, including the “URBI Payload Generator,” automating GeoJSON payloads, localization, and SDK integration for Urbi-based spatial services
- Engineered RESTful APIs and full-stack web tools for spatial planning, data publishing, and vector tile streaming across Flask and Leaflet stack

Supporting spatial planning tools by developing QGIS plugins, APIs, and web publishing tools

Key Skills: Spatial modeling, GeoServer, PostGIS, SDG dashboarding, Urbi integration, Arabic data workflows

Assistant Director GIS

DHA Lahore, Pakistan

May 2022 – Nov 2024

- Built a centralized GIS-based Land Record ERP automating DHA’s property management workflows
 - Integrated field data via Android apps, digitized revenue maps, and published web-based dashboards
 - Supported legal and planning teams with real-time spatial reports and analytical maps
- Key Skills: GIS Automation, ERP Planning, Web GIS, Land Cadaster, Planning Decision Support

GIS Development Manager

The Urban Unit – Govt. of Punjab, Lahore
Feb 2012 – Apr 2022

- Led 20+ provincial GIS projects across health, transport, land, infrastructure, taxation, and education
- Managed multi-component systems: Android field surveys, real-time dashboards, and MIS integration
- Collaborated with multiple departments including Excise, Health, PHC, SPU, Revenue, and HED
- Key Skills: Project Leadership, Spatial Dashboards, Android GIS, Inter-agency Coordination, Technical PM

Full Stack Developer

HCT Solutions, Bahawalpur
Jul 2011 – Jan 2012

- Developed web-based systems using PHP and MySQL for private sector real estate clients
- Initiated early experiments with GIS integration for location-aware dashboards
- Key Skills: PHP, MySQL, CodeIgniter, Web App Development

EDUCATION

- Master of Science in Computer Science (MCS), Lahore Leads University (2013-2015)
- Master of Science in Geographic Information Systems (MSc GIS), Punjab University Lahore (2009-2011)
- Bachelor of Commerce in Information Technology (B. Com IT), Islamia University Bahawalpur (2007-2009)
- Intermediate (FA General), Bahawalpur Board (2005-2007)
- Matriculation, Bahawalpur Board (2003-2005)

CERTIFICATIONS

- Enterprise GIS Made Easy (Udemy)
- QField Quickstart (Udemy)
- Display and Analyze GIS Data on the Web with Leaflet (Udemy)
- Survey of Python for GIS Applications (Udemy)
- Server-side Web GIS Applications with Leaflet and PostGIS (Udemy)
- Spatial SQL with Postgres: A Language for Geographers (Udemy)
- Web Engineering with PHP (PUCIT)

TECHNICAL SKILLS AND COMPETENCE

- **Programming Languages:** PHP, .NET, HTML5, JavaScript, C++, Python, R (for spatial analysis)
- **APIs/Libraries:** ESRI JS, Leaflet JS, OpenLayers JS, Angular JavaScript, Bootstrap3, Mapbox, Geopy, Urbi, zGIS
- **Frameworks:** .NET MVC4 Framework, CodeIgniter PHP, Laravel, WordPress, WooCommerce, Ionic, Django
- **Databases & Servers:** PostgreSQL (PostGIS), MySQL, SQL Server, MongoDB, GeoServer, ArcServer, Oracle Spatial
- **Tools:** Adobe Photoshop, PHP Storm, ESRI ArcGIS Desktop, QGIS, ArcMap, ArcCatalog, Google Earth, Google Maps

DETAILED PROJECT PORTFOLIO

Below is a selection of high-impact GIS and MIS projects I have led or contributed to across urban planning, infrastructure, land management, healthcare, and public governance in both Pakistan and Saudi Arabia.

Urban Governance & Land Management

GIS-Based Land Record ERP – DHA Lahore

Developed a full-scale GIS-based ERP for land records including data entry, revenue map digitization, real-time updates via mobile devices, and centralized spatial database with dashboards.

LRMIS – Board of Revenue Punjab

Built a robust Land Record Management Information System integrating mobile scanning, GIS cadaster digitization, and web publishing modules for all districts in Punjab.

Murree Construction TPV Audit – Punjab Govt

Used satellite imagery and GIS tools to assess legal/illegal constructions post-ban in Murree, Kotli Sattian & Kahuta tehsils.

UIPT System – Urban Unit + ET&NCD (KPK, Punjab, Sindh)

Led GIS integration in Urban Property Tax system for multiple provinces to increase revenue transparency and digitization of parcel records.

Infrastructure Planning & Monitoring

Khadim-e-Punjab Rural Roads Monitoring System

Designed Android + GIS dashboard system for real-time construction progress, road pictures, and validation workflows.

PTIMS – Punjab Transport Infra Management System

Built GIS-based system for mapping, managing and analyzing transport terminals, routes, and journey planners.

Railways Land Asset Management – Pakistan Railways

Developed a geo-enabled asset management platform for railways land including dashboards, field surveys, and compliance monitoring.

Healthcare, Disease & Emergency Projects

COVID-19 GIS Planning Tool – Urban Unit

Developed system for passenger tracking, NGO funding, and case management across Punjab using GIS + MIS layers.

Disease & Vector Surveillance System – Institute of Public Health

Built real-time dengue outbreak tracking system with hospital load stats and spatial visualizations.

Punjab Healthcare Commission Survey – GIS/Android App

Managed field data collection and reporting dashboards for healthcare facility inspections across Punjab.

Security, Elections & Emergency Management

SPU GIS Security Dashboard – Punjab Police

Developed GIS + MIS + Android based real-time monitoring platform for security of foreigners across Punjab.

Election Monitoring System (2013–18)

Created real-time violation reporting & analytics system with maps, constituency-level trends, and code of conduct tracking.

Flood Damage Assessment (2014–15)

Supervised mobile-based GIS field data collection for house damage assessments across flood-affected districts.

Education & Public Sector Analytics

Punjab Colleges Viewer – Higher Education Dept

Built web map with analysis tools for nearest college lookup, distance measurement, and buffer zones.

Baseline Survey – Child Labour (TPV)

Developed Android + GIS-based tool to locate and analyze child labor sites; included supervisor login, real-time map, and analytics.

Smart GIS Platform for Renewable Energy Land Selection

Created advanced GIS tool with parcel search, buffer analysis, and map-based site planning for solar/wind energy projects.

✓ *Each project involved hands-on development, team supervision, spatial database design, and direct client/stakeholder collaboration.*

WORKSHOPS:

- **Unlocking the Power of Spatial Data: Introduction to GIS and Mapping (PUCIT-CGIS)**
 - Explore the fundamentals of Geographic Information Systems (GIS) and spatial data analysis
 - Learn how to create interactive maps and visualize data using industry-leading software
- **Spatial Data Analysis with Open Source Tools (PUCIT-CGIS)**
 - Discover the capabilities of open-source GIS software, such as QGIS and GRASS
 - Hands-on training in spatial data analysis, data visualization, and mapping techniques
- **Advanced GIS Techniques for Renewable Energy Projects (PUCIT-CGIS)**
 - Learn how to apply GIS and spatial analysis in renewable energy project planning and development
 - Explore case studies and best practices in using GIS for land parcel selection, site assessment, and project optimization
- **Geospatial Data Science with Python (PUCIT-CGIS)**
 - Learn how to integrate GIS with data science tools, such as Python
 - Develop skills in geospatial data manipulation, analysis, and visualization using popular libraries and frameworks
- **Software Project Management Essentials**
 - Hosted at DHA Lahore
 - Learn the fundamentals of software project management, including agile methodologies and scrum frameworks