CURRICULUM VITAE

PhD (Remote Sensing & GIS)
GIS Specialist in Spatial Design, Development and Application

Personal Statement:

I am specialized, experienced, result oriented and highly motivated professional having 15 years of work experience in Spatial Design and Development, Satellite Remote Sensing and GIS. I have in-depth knowledge of geospatial application in Navigation Mapping, GIS web application development, natural resources management; infrastructure & urban planning climate change and agriculture gained through professional national and international work experience as well as through my academic experience and learning in M.Sc., MS and Ph.D. in field of Remote sensing & GIS.

Personal information	
Name:	Muhammad Amin s/o Haji Makhan Khan
Contact No:	Mob +92-321-7210752 ------- Office +92-51-9292208
NIC:	36501-6150192-5
Passport:	CM1201921
Marital Status:	Married
Permanent Address:	District Sahiwal Tehsil Chichawatni Chak no. 117/7DR Pakistan
Present Address:	House#840 Street 3C Link Street16 Ghouri Town Phase 5A Islamabad
E-mail:	m.amin@uaar.edu.pk aminspacian@gmail.com
Nationality:	Pakistan

Section I: Academic Record:

Education	PhD (Remote Sensing & GIS)
Research Title	Land assessment for crop suitability using remote sensing and geospatial technique: A case study of Punjab Pakistan
Title of qualification awarded:	Master of Science (MS) in Remote Sensing and GIS (Gold Medalist)
Research Thesis Title	Harvesting Scarce water by conserving precipitation and surface runoff in Potohar plateau using Geo-spatial technique
Principal subjects/ occupational skills	Geo-Information for Agriculture Monitoring, Advanced studies included: Advance Remote Sensing, Web GIS, Geo-Information for Urban and Agriculture Planning,

covered:	Advanced Research Method, Climate Change, Geo-Spatial Data Modelling Basic and Advance GIS (Spatial Analysis, 3-D Analysis, Overlay Analysis, and Network Analysis with Topology, Hyper-Temporal RS & GIS, Hydrological Modeling, and Hydrology Tools etc). Digital Image Processing, GIS based Web Application

Section II: Employment Record:

Date:	Jan 2013-Present
Occupation/Position held:	Assistant Professor (BPS-19) (Remote Sensing & GIS)
Main activities and responsibilities:	Responsible for teaching research activities. Upgraded the department's laboratories for improved research environment. Secured projects from National funding organizations and worked in national level projects in the field of Remote Sensing and GIS. • Organized and conducted national level and international seminars and workshop on global issues on agriculture, climate change, water crisis issues and food security. • Acknowledged for boosting the external linkages of the university. • Coordinator of the morning and evening program for the Institute (04 Departments). • Managing and Handling national and International Projects
Name and address of employer:	Institute of Geo-Information & Earth Observation (IGEO) PMAS-Arid Agriculture University Rawalpindi Pakistan
Dates:	July 2009 - December 2013
Occupation/Position held:	**Manager GIS & RS**
Main activities and responsibilities:	• Project Management • Digital Data Preparation • Data Management • Finalization of Project • Trimble GPS Trainer • GPS Survey Monitoring • Surveyed Data Management • Digital Maps Preparation at Different Scales • Team Management
Name and address of employer:	Daleelteq Private Limited 11-D 6Th Road Satellite Town Rawalpindi Pakistan Pakistan, Saudi Arabia, Sudan and Tunis
Type of business or sector:	(Software Services, GIS and RS Company)

Dates	Jan 2011- December 2012
Occupation/Position held:	**Consultant GIS, RS and IT**
Name and address of employer:	Buraq Integrated Solutions

Project Orders:
Most recent first

Projects:

Projects with National and International Institutions

Project Title: Improving groundwater management to enhance agriculture and farming livelihoods in Pakistan
Project Objectives:

- ✓ *Develop and articulate a shared understanding of sustainable groundwater use for agriculture and the need for improved management in Balochistan, Punjab and Sindh provinces.*
- ✓ *Develop, with collaborating stakeholders in each case study, groundwater management tools and options that have the potential to enhance livelihoods of farming families.*
- ✓ *Enhance capacity and institutional arrangements for post project adoption of tools and options developed in Objective 2 by collaborating stakeholder organisations.*

Funding Agency: ACIAR (Australia)
Research Role: GIS Specialist
Status: Ongoing
Project Duration: 2015-2021

Project Title: Pilot Project for Data Driven Smart Decision Platform for Increased Agriculture Productivity
Project Objectives:

- ✓ *Establishment of Digital Agriculture Data Resource Center at PMAS-AAUR with the capability to utilize Big Data & AI at Federal/ Central level.*
- ✓ *Provision and Installation of IT Equipment at selected R&D Institutions and selected Farms.*
- ✓ *Provision and Installation of IoT-based hydro-met systems at selected farm locations.*
- ✓ *Implementation ofSmart Farms: one each in South Punjab (Irrigated), North Punjab (Arid area) and Khyber-Pakhtunkhwa.*
- ✓ **Funding Agency:** Govt. of Pakistan

Research Role: Principal Investigator
Status: Ongoing

Project Duration: 2020-2023

- ➢ **Project Title:** Nationwide Rollout of National Socio Economic Registry (NSER) BENAZIR INCOME SUPPORT PROGRAM (BISP)
Project Objectives:

- ✓ *"100 % Coverage (Geographic & Demographic) with Quality through Door to Door Approach Using information technology"*

Funding Agency: Govt. of Pakistan, BISP
Research Role: GIS Team Lead
Status: Completed
Project Duration: 2017-2020

- **Project Title:** Re-defining of Agro-Ecological Zones and Crop Suitability Analysis of Sindh, Pakistan

Project Objectives:

- ✓ *Identify different Agro-ecological zones in Sindh based on Agro-climatic and Edaphic variables; and*
- ✓ *Identify seasonal changes in Agro-ecological zones to cater for sustainability of Crop suitability mapping*
- ✓ *Land evaluation based on agro-economic analysis*

Funding Agency: FAO and Govt. of Sindh
Research Role: Team Leader
Status: In-progress

Project Duration: 2018-2019

- **Project Title:** Establishment of Agro-Ecological Zones of Punjab, Pakistan

Project Objectives:

- ✓ *Identify different Agro-ecological zones in Punjab based on Agro-climatic and Edaphic variables; and*
- ✓ *Identify seasonal changes in Agro-ecological zones to cater for sustainability of Crop suitability mapping*
- ✓ *Land evaluation based on agro-economic analysis*

Funding Agency: FAO and Govt. of Punjab
Research Role: Expert Member
Status: Completed
Project Duration: 2015-2017

- **Project Title:** Optimization Canal and Water Requirement of Rachna Doab Punjab Pakistan

Project Objectives:

- ✓ *To support PIDA and Farmer Organization in the implementation of more equitable, economically efficient and hydro-logically sustainable canal and groundwater management options in the study areas.*
- ✓ *To develop improved canal and groundwater management options acceptable to stakeholders by using the optimization tools in a participatory mode with Farmer*

Organizations

- ✓ *To develop tools capable of analyzing hydrological and economic water management trade-off scenarios using spatial crop, soil, water availability and water quality data.*

Funding Agency: Australian Centre for International Agricultural Research (ACIAR)
Research Role: Team Member
Project No. LWR-2005-144
Status: Completed
Project Duration: 2013-2015

- ➢ **Project Title:** Rainwater Harvesting Project of all Villages of Potohar area Punjab Pakistan

Project Objectives:

- ✓ *To harvest scarce water by conserving precipitation and surface runoff*
- ✓ *To check the soil losses and increase it productivity through devising sustainable soil conservation measure*
- ✓ *Mobilization of resource for the uplift of rural poor*

Funding Agency: Planning & Development Punjab, Pakistan
Research Role: Expert Team Member
Project No. MTDF & ADP- G.S. No.674
Status: Completed
Project Duration: 2013-2016

- ➢ **Project Title:** Selection of Potential site for runoff water harvesting in D.G Khan and Rajanpur Rod-Kohi area of Pakistan using Remote Sensing and GIS Technology

Project Objectives:

- ✓ *To investigate surface runoff potential in D.G Khan and Rajanpur Rod-Kohi areas.*
- ✓ *To identify potential water harvesting site using high resolution DEM and ancillary data*
- ✓ *Propose strategies for effective management of surface runoff for sustainable agriculture development in rod-kohi area*

Funding Agency: Pakistan Agriculture Research Council
Research Role: Co-P.I.
Project No. F.1-12/2014-CS(443)
Status: Completed
Project Duration: 2014-2015

- ➢ **Project Title: Design and Implementation of Navigation System of Pakistan**

Project Objective

- ✓ *To prepare GIS based vector data of all Pakistan Road Network*
- ✓ *To prepare GIS based street data of top 54 cities of Pakistan*
- ✓ *DGPS based survey of all Road Network of Pakistan*
- ✓ *Design web based navigation routing of prepared data*

Funding Agency: ***Navteq International*** (subsidiary of Nokia)
Role: Team Leader
Project No. Daleeteq-2009-Nav.
Status: Completed
Project Duration: 2009-2012

- ➢ **Project Title: Development of Navigation System of Bangladesh**

Project Objective

- ✓ *To prepare GIS based road network of Bangladesh*
- ✓ *To prepare GIS based street data of top 12 cities of Bangladesh*
- ✓ *SDVR based survey of all Road Network of Pakistan*

Funding Agency: ***Navteq International and Mappa ltd***
Role: Team Leader
Project No. Mappa-2011-Nav.
Status: Completed
Project Duration: 2011-2012

- ➢ **Project Title: Collection of POIs (Point of Interests) of top 4 cities of Indonesia**

Project Objective

- ✓ *To collect point data of 4 major cities of Indonesia*
- ✓ *To correlate point data with street navigation system*

Funding Agency: ***Navteq International*** (subsidiary of Nokia)
Role: **Asst.** Team Leader
Project No. Daleeteq-2009-Jak.
Status: Completed
Project Duration: 2009-2010

- ➢ **Project Title: Verification and New Collection of POIs (Point of Interests) of Bangkok City Thailand**

Project Objective

- ✓ *To collect point data of Bangkok City*
- ✓ *To verify with DGPS existing point database of Bangkok city*
- ✓ *Correlate point data with existing street navigation system*

Funding Agency: ***Navteq International and EDA International***
Role: Team Leader
Project No. Buraq-2011-Nav.
Status: Completed
Project Duration: 2012-2013

	➢ **Project Title: Development of APT's of Bangkok** **Project Objective** ✓ *To collect APT's (Address point of house) data of Bangkok City* ✓ *To verify with DGPS existing APT's database of Bangkok city* **Funding Agency:** ***Tom Tom*** **Role:** Team Leader **Project No.** Buraq 2012-TomTom. **Status:** Completed **Project Duration:** 2012-2013
Developed Applications:	**1. Developing Decision support system based on evapotranspiration and Crop water needs** ✓ *A web based decision Support tool was developed at PMAS-AAUR to assist researchers, policy makers and farmers to calculate the crop water requirements at field level* ✓ *The tool uses google API. Individual farms can be easily located by using Lat long or through navigation pan.* ✓ *After selection of crop to be grown, the tool provides monthly water requirements for the specific crop both tabular and graphical.* ✓ *The DSS will assist the policy makers, PIDA officials and Farmer's organizations to make optimal decisions viz-a-viz surface water (and ground water) availability)* **2. Spatial ET0 calculation using developed models** ✓ *Spatial ET0 calculator was prepared by UAAR team, which is also include a manual for using the software developed. Hands on training are provided in the labs for using the software in different training sessions. Location specific surface and ground water data, crops grown and the modeling input are linked using geo-spatial overlay analysis.* **3. Disease monitoring and risk mapping for Livestock department Punjab** **4. Dengue monitoring system through RS, GIS and Web development**

Section III: Publication & Trainings:

Research Publications:

International Journal Paper:

1. Hina, S. M., Szmerekovsky, J., Lee, E., **Amin, M.,** & Arooj, S. (2022). Identifying Suitable Solid Waste Landfill Sites Using Spatial Multi-Criteria Decision Analysis. *The* ***Journal of Solid Waste Technology and Management,*** *48*(2), 196-207. ***Impact Factor: 0.438***

2. Amin, M., Khan, M. R., Hassan, S. S., Imran, M., Hanif, M., & Baig, I. A. (2022). Determining satellite-based evapotranspiration product and identifying relationship with other observed **data** in Punjab, Pakistan. ***Environment,***

Development and Sustainability, 1-17. ***Impact Factor: 4.080***

3. Khan, M. R., **Amin, M.,** Ahmad, Z., & Sagin, J. (2002). Mapping and monitoring of urban sprawl to promote sustainable urbanization using geospatial techniques. ***Applied Ecology and Environmental Research,*** *19*(6), 4443-4457. ***Impact Factor: 0.711***

4. Felegari, S., Sharifi, A., Moravej, K., **Amin, M.,** Golchin, A., Muzirafuti, A., ... & Zhao, N. (2021). Integration of Sentinel 1 and Sentinel 2 Satellite Images for Crop Mapping. ***Applied Sciences,*** *11*(21), 10104. ***Impact Factor: 2.838***

5. Abbas, I., Liu, J., **Amin, M.,** Tariq, A., & Tunio, M. H. (2021). Strawberry Fungal Leaf Scorch Disease Identification in Real-Time Strawberry Field Using Deep Learning Architectures. ***Plants,*** *10*(12), 2643. ***Impact Factor: 4.658***

6. Hina, S. M., Szmerekovsky, J., Lee, E., **Amin, M.,** & Arooj, S. (2020). Effective municipal solid waste collection using geospatial information systems for transportation: A case study of two metropolitan cities in Pakistan. ***Research in Transportation Economics,*** *84*, 100950. ***Impact Factor: 2.904***

7. Baig, M. H. A., Abid, M., Khan, M. R., Jiao, W., **Amin, M.,** & Adnan, S. (2020). Assessing meteorological and agricultural drought in Chitral Kabul river basin using multiple drought indices. ***Remote Sensing,*** *12*(9), 1417. ***Impact Factor: 5.349***

8. **Amin, M.,** Khan, M. R., Hassan, S. S., Khan, A. A., Imran, M., Goheer, M. A., ... & Perveen, A. (2020). Monitoring agricultural drought using geospatial techniques: a case study of Thal region of Punjab, Pakistan. ***Journal of Water and Climate Change***, *11*(S1), 203-216. ***Impact Factor: 2.803***

9. **Amin, M.,** Khan, M. R., Baig, M. H. A., Baig, I. A., Imran, M., & Hanif, M. (2020). Calculation and Validation of Actual Evapotranspiration from Satellite Derived Indices with Observed Data in Delineated Agro-Climatic Zones of Punjab Using Remote Sensing and GIS Techniques. ***Applied Ecology and Environmental Research***, *18*, 4637-4650. ***Impact Factor: 0.711***

10. **Amin, M.,** Bano, D., Hassan, S. S., Goheer, M. A., Khan, A. A., Khan, M. R., & Hina, S. M. (2020). Mapping and monitoring of glacier lake outburst floods using geospatial modelling approach for Darkut valley, Pakistan. ***Meteorological Applications***, *27*(1), e1877. ***Impact Factor: 2.451***

11. Tariq, A., Riaz, I., Ahmad, Z., Yang, B., **Amin, M.,** Kausar, R., ... & Rafiq, M. (2020). Land surface temperature relation with normalized satellite indices for the estimation of spatio-temporal trends in temperature among various land use land cover classes of an arid Potohar region using Landsat data. ***Environmental Earth Sciences***, *79*(1), 1-15. ***Impact Factor: 3.119***

12. **Amin, M.,** Khan, A. A., Perveen, A., Rauf, Z., Hassan, S. S., Goheer, M. A., & Ijaz, M. (2019). Drought risk assessment: a case study in Punjab, Pakistan. ***Sarhad Journal of Agriculture***, *35*(1), 234-243. ***Impact Factor: 0.55***

13. Khan, A. A., Ashraf, M. I., Malik, S. U., Gulzar, S., & **Amin, M.** (2019). Spatial trends in surface runoff and influence of climatic and physiographic factors: A case study of watershed areas of Rawalpindi district. ***Soil & Environment***, *38*(2). ***Impact Factor: 1.23***

14. Yasin, M. W., Khan, M. R., & **Amin, M.** (2018). Impacts of Spatio-Temporal Changes in Rainfall and Temperature on Different Crops in Selected Districts of Punjab, Pakistan. ***Sarhad Journal of Agriculture***, *34*(2). ***Impact Factor: 0.55***

15. Karim, F., Ashraf, M. I., **Amin, M.,** Khan, M. R., & Khan, A. A. (2016). Impact of climatic factors on land-use changes using geo-spatial techniques. ***Journal of Applied Agriculture and Biotechnology***, *1*(2), 58-68.

Mother tongue:	Urdu, Punjabi		
Other language:	English		
Self-assessment:	**Understanding**	**Speaking**	**Writing**

	Proficient User	Proficient User	Proficient User
Computer Language skills and competences:	Python, C, C++, vb 6.0, Web GIS Developments, Map Server Apache, PHP, SQL, My SQL, SQL Server		
References	**Name**	**Occupation or Business**	
	Prof. Dr. Jehnzeeb Masood Cheema	Professor (Agri Engineering) Faculty of Agricultural Engineering & Technology PMAS Arid Agriculture University Rawalpindi	
	Dr. J.F Punthakey	Director Groundwater & Environment Ecoseal Pty Ltd	