

## Resume

### Nezar Atalla Hammouri

Professor of GIS and Remote Sensing



University of Sharjah

Faculty of Science

Department of Applied Physics and  
Astronomy (DAPA)

P.O. Box 330175, Zarqa 13133, Jordan

P. O. Box 27272 Sharjah, UAE, Tel: +971  
6 5585000

Mobile +971 501 3924 31

[nhammouri@sharjah.ac.ae](mailto:nhammouri@sharjah.ac.ae)

## Personal Data

**Birth Date** : 29<sup>th</sup> Nov. 1971  
**Sex** : Male  
**Nationality** : Jordanian  
**Marital Status** : Married with four kids



## Education

Ph.D., 1997-2002: Applied and Environmental Geology, University of Jordan. Thesis Title: " **Remote Sensing and GIS-Assisted Modeling of Soil Induced Erosion Hazards: A Case study in Amman – Zarqa Basin**"

Ms.C. 1993-1996: Geology, Yarmouk University. Thesis Title: " **The Application of Computer Expert Systems in the Analysis of Seismic Refraction Data**".

Bs.C. 1989-1993: Earth and Environmental Science (major), Computer Sciences (minor), Yarmouk University, Jordan.

## Qualifications Summary

I believe in the role of new technologies in better management of our natural resources. Through the last 20 years of my experience in GIS and Remote Sensing techniques, I was always impressed with the unlimited potentials of these technologies and the results we got.

I was involved in several international and national projects funded by international agencies like USAID, UNDP, UN, DFG and others. I have also a solid experience in running and calibrating hydrological models using different GIS based tools like SWAT, HEC-HMS, WEAP, HSPF, and WMS.

I have more than 25 papers published in international peer-reviewed Journals. The topics of these articles include: Hydrological and Hydrogeological modelling in arid and semi-arid regions, assessment of climate change impacts on water resource, drought assessment using rainfall based indices and vegetation indices, groundwater vulnerability, stability analysis of slopes, flood modeling and others. I used different modeling tools in these studies, as: SWAT, WEAP, HEC-HMS, HEC-RAS, MODFLOW, WMS and others.

I joined several international and national conferences and workshops that related to climate change, IWRM, hydrological modelling, drought and flood assessment, water allocations, water harvesting besides GIS and Remote Sensing applications.

## Academic Promotions

**12 Jun 2017 : Professor**, Department of Earth and Environmental Sciences, Hashemite University

**24 Nov 2008** : Associate Professor, Department of Earth and Environmental Sciences, Hashemite University

**16 Dec 2002** : Assistant Professor, Department of Earth and Environmental Sciences, Hashemite University.

## Positions

**16 Dec 2017 – Now**: Dean of Prince El-Hassan Bin Tala Faculty for Ari Lands, The Hashemite University

**13 Sep 2009 – 1 Sep 2010, 17 Sep 2011—20 Sep 2012, 1 Sep 2015 - Now**: Vice dean, Faculty of Natural Resources and Environment, The Hashemite University, Zarqa-Jordan.

**16 Dec 2006 – 12 Sep 2009**: Head of Department of Earth and Environmental Sciences, The Hashemite University, Zarqa-Jordan.

## Sabbatical Leaves

**Sep. 2010 – Sep. 2011**: McGill University, Faculty of Agriculture and Environment, Department of Bio-resources Engineering, Montreal-Canada.

## Fellowships and Grants

**June-Aug 2009**, Deutsche Forschungsgemeinschaft (DFG) mobility grant to conduct a research project at Technical University of Munich (TUM), Germany. Grant total: **EURO 10,000**

**Sep 2010-Sep 2011**, Arab Disguised Scholar, Arab Fund for Economic & Social Development, grant to fund a research project at McGill University – Canada. Project title “Assessing the impacts of climate change on water resources of North Jordan”. Grant Total: **US\$ 80,000**

## Experiences

1 Sep 2021 – now : **Faculty Member**, Faculty of Science, Department of Applied Physics and Astronomy (DAPA), University of Sharjah, UAE.

16 Oct 2002 – 1 Sep 2021: **Faculty Member**, Faculty of Natural Resources and Environment, Department of Earth and Environmental Sciences, The Hashemite University, Zarqa-Jordan.

Aug 1997 – 1 July 2002: **Programmer**, Computer Center, Jordan University of Science and Technology.

Aug. 1996 – Aug 1997: **Research Associate**, Project titled "**Geological, Engineering and Hydrological Evaluation of Landslides in Jordan**", Funded by the Higher Council for Science and Technology. Jan. 1995-Dec. 1997. A Joint research between Jordan University of Science and Technology and Yarmouk University.

Sep. 1993 – Jul. 1996: **Teaching Assistant**, Department of Earth & Environmental Science, Yarmouk University.

## Consultations

**1-Mar-2017 – 1-Jun-2017**: National Consultant, GIZ Project entitled "Initiating the national adaptation plan (NAP) process in Jordan to support the implementation of the Paris Agreement and Jordan's Nationally Determined Contribution (NDC)"

**1-July, 2002 – 1-July, 2003**: GIS, Remote Sensing and IT Consultant, Greater Irbid Municipality, Jordan.

## Projects

**April 2014-April 2016: Selecting new sites in Jordan for hazardous waste dumping sites using Remote Sensing and GIS.** A project funded by Deanship of Research at the Hashemite University. Total Fund US\$100,000

**Nov 2010 – Nov 2011, Development of Policy Options for Adaption to Climate Change and Integrated Water Resources Management.** This study was part of a multi task project implemented by the MoEnv with support from UNDP. The project represents one component out of four with together form the UNCT joint programme titled "Adaptation to Climate Change to Sustain Jordan's MDG Achievements" implemented by the MWI, MoEnv, MOA, MOH, and MOPIC, in cooperation with UNDP, WHO-CEHA, UNESCO, and FAO.

**July 2010 – July 2011, Assessment of Direct and Indirect Impacts of Climate Change Scenarios.** This project is one component out of four with together form

the UNCT Joint Programme titled “Adaptation to Climate Change to Sustain Jordan’s MDG Achievements” implemented by the MWI, MoEnv, MOA, MOH, and MOPIC, in cooperation with UNDP, WHO-CEHA, UNESCO, and FAO.

**Jul 2008 – Sep 2008: Jordan Valley Authority. Member of the Jordanian Syrian Technical Committee** that aims at writing a TOR for international tender to identify the major problems associated with the water resources of Al-Wehda Dam, North Jordan.

**Aug 2003 – Aug 2004, USAID, University of Jordan and The Hashemite University: Water Allocation project for the new constructed dams in south Jordan (Walla, Tannour and Mujib dams).** Main Duties: Building GIS based project Database, Hydrological simulation using River Tools and Watershed Modeling System (WMS).

**Sept. 2002 – Sept. 2003, Ministry of Agriculture, Site selection of earth fill dams for water harvesting projects in Yarmouk Basin – Jordan:** Main Duties: Hydrological Modeling of Yarmouk Basin, Watershed and sub-catchment delineation using GIS, building GIS database of the project, Build a site selection model using GIS.

## Publications

**Al-Kofahi, S.D., Hammouri, N., Sawalhah, M.N. et al. (2018),** Assessment of the urban sprawl on agriculture lands of two major municipalities in Jordan using supervised classification techniques Arab J Geosci 11: 45.

<https://doi.org/10.1007/s12517-018-3398-5>

**Nezar Hammouri, Suhail Sharadqah (2016),** The Use of Artificial Neural Networks (ANN) in the Multispectral Classification of Landsat Images, International Conference on Innovation and Management, Kuala Lumpur, Malaysia, July 12-15, 2016.

**Nezar Hammouri, Jan Adamowski, Muwaffaq Freiwan, Shiv Prasher (2016)** Climate change impacts on surface water resources in arid and semi-arid regions: a case study in northern Jordan, Acta Geod Geophys DOI 10.1007/s40328-016-0163-7. Online first: 19 Feb 2016.

**Nezar Hammouri, Mohammad Al-Qinna, Mohammad Salahat, Jan Adamowski, Shiv O. Prasher (2015),** Community Based Adaptation Options for Climate Change Impacts on Water Resources: The Case of Jordan, Journal of Water and Land Development, 2015, No. 26 (VII–IX): 3–17.

**Nezar Hammouri, Fayez Adbulla, Hani Abu Qdais, Muwaffaq Freiwan (2015),** ASSESSING THE IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES OF

Nezar Hammouri CV

JORDAN, Book of Proceeding, World Water Congress XV, International Water Resources Associations (IWRA), 24-29 May 2015, Edinburgh, Scotland – UK.  
<https://iwra.org/member/index.php?mainpage=&page=286&congressyear=2015>

Mahmoud Abu-Allaban, Ali El-Naqa, Mohammed Jaber, **Nezar Hammouri (2015)**. Water scarcity impact of climate change in semi-arid regions: A case study in Mujib basin, Jordan. *Arabian Journal of Geosciences*. 2015(8). DOI 10.1007/s12517-014-1266-5

Abdullah Diabat, Fayez Ahmad, **Nizar Hammouri**, Mutewekil Obeidat (2015), Karst development related to extensional fracture network at Bany-Kanana area Northern Jordan, *Arabian Journal of Geosciences*, Vol (8), No. (7).

M. Salahat , M. Al-Qinna , K. Mashal , N. Hammouri (2014), Identifying Major Factors Controlling Groundwater Quality in Semiarid Area Using Advanced Statistical Techniques, *Water Resources Management Journal*, 2014 (8).

Hani Al Amoush, **Nezar Hammouri**, Mohammed Al Farajat, Elias Salameh, Abdullah Diabat, Mohammed Hassoneh, Rida Al-Adamat **(2013)**. Integration of Aeromagnetic Data and Landsat Imagery for Structural Analysis Purposes: A Case Study in the Southern Part of Jordan. *Journal of Geographic Information System*, 2013, 5, 198-207. doi:10.4236/jgis.2013.53019

**Nezar Hammouri**, Hani Al-Amoush, Marwan Al-Raggad and Sura Harahsheh **(2013)**. Groundwater recharge zones mapping using GIS: a case study in Southern part of Jordan Valley, Jordan. *Arabian Journal of Geosciences*. June 2013. DOI10.1007/s12517-013-0995-1

**Nezar Hammouri**, Ali El-Naqa, Mohammed Barakat **(2012)**. An Integrated Approach to Groundwater Exploration Using Remote Sensing and Geographic Information System. *Journal of Water Resource and Protection*, 2012, 4, 717-724, doi:10.4236/jwarp.2012.49081

Mohammed Al-Qinna, **Nezar Hammouri**, Mutewekil Obeidat, Fayez Ahmad **(2011)**. Drought analysis in Jordan under current and future climates, *Climatic Change*, Volume 106, Number 3, June 2011 , pp. 421-440(20).

Hani Al-Amoush, **Nezar Hammouri**, Franz Zunic and Elias Salameh **(2010)**. Intrinsic Vulnerability Assessment for the Alluvial Aquifer in the Northern Part of Jordan Valley. *Water Resources Management* (2010) 24:3461–3485 DOI 10.1007/s11269-010-9615-y

Ali El-Naqa , **Nezar Hammouri**, Khalil Ibrahim and Masdouq El-Taj **(2009)**. Integrated Approach for Groundwater Exploration in Wadi Araba Using Remote Sensing and GIS. Jordan Journal of Civil Engineering, Volume 3, No. 3, 2009.

Mutewekil M. Obeidat, Fayez Y. Ahmad, **Nezar Hammouri**, Adnan M. Massadeh, and Faisal S. Athamneh **(2008)**, Assessment of nitrate contamination of karst springs, Bani Kanana, northern Jordan, Revista Mexicana de Ciencias Geológicas, Vol. 25 No.3.

**Nezar Hammouri**, Abdulla Malkwai and Mohammad Yamin **(2008)**, Stability Analysis of Slopes Using Finite Element Method and Limiting Equilibrium Approach, Bulletin of Engineering Geology and Environment, Volume 67, Number 4 p471-478.

**Nezar Hammouri** and Ali El-Naqa **(2007)**, Hydrological Drought Assessment Using GIS and Remote Sensing for Amman-Zarqa Basin, Jordan. Jordan Journal of Civil Engineering, Jordan University of Science and Technology, Vol. 1 No. 2, Dec. 2007.

**Nezar Hammouri**, and Ali El-Naqa **(2007)** Hydrological modeling of ungauged wadis in arid environments using GIS: a case study of Wadi Madoneh in Jordan, REVISTA MEXICANA DE CIENCIAS GEOLÓGICAS, v. 24, núm. 2, 2007, p. 185-196

Ali El-Naqa, Mohammad Al-Momani, Suzan Kilani, **Nezar Hammouri1 (2007)**: Groundwater Deterioration of Shallow Groundwater Aquifers Due to Overexploitation in northeast Jordan, Clean Air, Soil, Water, Volume 35, Issue 2, Date: April 2007, Pages: 156-166.

**Nezar Hammouri** and Ali El-Naqa **(2007)**. Drought Assessment Using GIS and Remote Sensing in Amman-Zarqa Basin, Jordan. Jordan Journal of Civil Engineering, Volume 1, No. 2.

Mustafa Al Kuisi, **Nezar Hammouri** and Ali El-Naqa **(2006)**: Vulnerability mapping of shallow groundwater aquifer using SINTACS model in the Jordan Valley area, Jordan, Environmental Geology, Volume 50, Number 5, July 2006 , pp. 651-667(17)

Ali El-Naqa and **Nezar Hammouri (2006)**: GIS-based evaluation of groundwater vulnerability in Russeifa Area, Jordan, REVISTA MEXICANA DE CIENCIAS GEOLÓGICAS, Vol. 23, No. 3, p. 277-287.

**Nezar Hammouri** and Ali El-Naqa **(2006)**: GIS based Hydrogeological Vulnerability Mapping of Groundwater Resources in Jerash Area, Geofisica Internacional, Vol. 46. No. 1, January, 2008.

## Conferences and Workshops

**Nezar Hammouri, Suhail Sharadqah (2016)**, The Use of Artificial Neural Networks (ANN) in the Multispectral Classification of Landsat Images, International Conference on Innovation and Management, Kuala Lumpur, Malaysia, July 12-15, 2016.

**Nezar Hammouri, Fayez Abdulla, Hani Abu Qdais, Muwafaq Freiwan (2015)**, Assessing The Impacts of Climate Change on Water Resources of Jordan, World Water Congress XV, International Water Resources Association (IWRA), Edinburgh, Scotland , 25-29 May 2015.

**Nezar Hammouri (2007)**, Building Jordan's National Spatial Data Infrastructure (NSDI), Current situation and future planes. 11<sup>th</sup> International User Group Conference and Education Session, Kula Lumpur, March, 2007.

Member of the organizing and scientific Committee for the “**International Conference in Roller Compacted Concrete Dams Construction in Middle East**”, 7<sup>th</sup> – 10<sup>th</sup> April 2002, Jordan University of Science and Technology, Irbid Jordan.

Workshop on “**Education and Capacity Building in Space Technology for the Benefit of Developing Countries**” with an emphasis on remote sensing, 25<sup>th</sup> – 27<sup>th</sup> September 2003, Bremen, Germany.

Coordinators Committee for “**Advances in Geotechnical Engineering with Emphasis on Dams, Highway Materials, and Soil Improvement**”, 12<sup>th</sup> – 15<sup>th</sup> July 2004, Organized by Jordan University of Science and Technology, Louisiana State University and University of Akron. Irbid Jordan.

**The 8th International Conference of Jordanian Geologists Association** April 6-7, 2004, Amman, Jordan.

**First Environmental Week, 3<sup>rd</sup>-6<sup>th</sup> May 2004**, organized by Faculty of Natural Resources and Environment, Hashemite University, Zerqa-Jordan.

**Land Development and Drought Management Workshop**, 18<sup>th</sup> to 22<sup>nd</sup> of July, 2004. Organized by Center of Water Researches, University of Jordan,

**Groundwater conservation in Jordan Workshop**, 11<sup>th</sup> of May 2004, Organized by Faculty of Natural Resources and Environment, Hashemite University, Zerqa-Jordan, Ministry of Water and Irrigation, Amman-Jordan, and UESCO Wadies Hydrology Chair, University of Jordan, Amman-Jordan.

**Water Allocation and Reservoir Management Workshop**, 2<sup>nd</sup>-6<sup>th</sup> of January, 2005, organized by Center of Water Researches, University of Jordan, Amman-Jordan and Ministry of Water.

**Integrated Water Resources Management Workshop**, 20<sup>th</sup>-25<sup>th</sup> of Jun, 2005,  
Organized by Al-Balqa` Applied University, Salt, Jordan and UESCO Wadies Hydrology  
Chair, University of Jordan, Amman-Jordan

**8<sup>th</sup> ESRI Middle East and Africa Users Conference**, 6 to 8 December, 2005 Sharm-el-  
Sheikh, Egypt.

**9<sup>th</sup> ESRI Middle East and Africa Users Conference**, 31 October to 2 November 2006,  
Amman-Jordan.

International Workshop "**Drought or Flood in the Middle East**", 26-28 November,  
2006, Jordan University of Science and Technology, Irbid, Jordan.

**Training Workshop on Education for sustainability**, 21-24th January, 2007, Organized  
By ASEZA and PERSGA, Aqaba-Jordan.

**11<sup>th</sup> International User Group Conference and Education Session**, 5-9<sup>th</sup> March, 2007,  
Organized by CARIS international, Kuala Lumpur, Malaysia.

**International Conference on Environment**, Organized by School of Chemical  
Engineering, University Sains Malaysia, 15-17 December 2008, Penang- Malaysia.

### Supervised Ms.C. Thesis

**Stability Analysis of Slopes using Finite Elements Method and Limiting  
Equilibrium Approach (Co-Advisor)**, By Mohammad M. A. Yamin, Department of  
Civil Engineering, Jordan University of Science and Technology, Advisor : Prof Dr.  
Abdulla I. H. Malkawi, January 2004.

**Geological and Land Use Mapping Using Integrated GIS and Remote Sensing  
Techniques of Rusiefa Area (Co-Advisor)**, By Maha Al-Turani, Department of Earth  
and Environmental Sciences, Hashemite University. Advisor: Dr. Issa Makhlof,  
September 2004.

**Seismic Hazard Assessment and Mitigation of Earthquake Risk in Unite Arab  
Emirates (Co-Advisor)**, By Wassel Mohammad AL-Bodour, Department of Civil  
Engineeingr, Jordan University of Science and Technology, Advisor : Prof Dr.  
Abdulla I. H. Malkawi, April 2005.

**An Integrated Approach modeling to groundwater exploration in Khan Az Zabib  
Area using Remote Sensing Techniques and GIS (Main Advisor)**, By Mohammad  
Isam Barakat, Department of Earth and Environmental Sciences, Hashemite  
University. Co-Advisor: Dr. Ali El-Naqa.



**GIS Based Assessment of Groundwater Vulnerability in the Vicinity of Kherbet As Samra Wastewater Treatment Plant Area, Zarqa Area.** (Co-Supervisor), By Rana Khaled Abu Isba'a, Department of Earth and Environmental Sciences, Hashemite University, May 2009.

**Assessment of climatic changes impact on water resources using GIS and remote sensing techniques, Yarmouk Basin, North Jordan** (Main Advisor), By Huda Mohammad Samara, Department of Earth and Environmental Sciences, Hashemite University, May 2009.

**Drought Assessment at Wadi Mujib Basin using advanced GIS and Remote Sensing Techniques** (Main Advisor), By Amnea Aba Zaid, Department of Earth and Environmental Sciences, Hashemite University, April 2010.

**Drought Assessment Using Advanced GIS and Remote Sensing Techniques: A Case Study of Tarmouk River Basin** (Co-Supervisor), By, Amal Hussein AL-Dardoor, Department of Earth and Environmental Sciences, Yarmouk University.

**Evaluating Landcover Changes at Zarqa River Basin using GIS and Remote Sensing Techniques** (Main Advisor), By Amnea Aba Zaid, Department of Earth and Environmental Sciences, Hashemite University, Sept 2010.

**Geological Mapping Using Remote Sensing and GIS Techniques: A Case study in Umm Qais Northern Jordan** (Main Advisor), By Rasha Mohammad Salem Al-Harashshe, Department of Earth and Environmental Sciences, Hashemite University March 2016

**Investigating the Spatio – Temporal changes in NDVI with relationship of some climatic variables using Remote Sensing and Geographic Information Systems at Yarmouk Basin** (Main Advisor) By Heba Mohammad Amin Abu Assal, Department of Earth and Environmental Sciences, Hashemite University February 2016.

**Assessing Groundwater Pollution by GIS application and Geophysical methods in Al-Dhulel, Zarqa – Jordan** (Co-supervisor). By Randaa Salem Alhajaj Department of Earth and Environmental Sciences, Hashemite University November 2015.

**Detecting Subsurface Pollution in Al Samra Waste water treatment plant by Geophysical and GIS Applications** (Co-Supervisor), By Ahmad Awad, January 2017.

**Ms.C. Examination Committee**

**Determination of Temperature Distributions and Thermal Stresses for RCC DAMS Using Two Different Finite Elements Codes, A Comparative Study.** By Ehab S. Shatnawi, Department of Civil Engineering, Jordan University of Science and Technology, January 2004.

**The Effect of Shredded Waste Tires on Some Soil Properties.** By Sameer Ahmed Al-Mousa, Department of Civil Engineering, Jordan University of Science and Technology Feb. 2003

**Effect of fly ash on the mechanical properties of RCC, Laboratory Study.** By Hussien Shaye', Department of Civil Engineering, Jordan University of Science and Technology, July 2003.

**Feasibility of on-site decentralized waste water management for selected unsewered community in Jordan ,** By Qais Al-Omari, Department of Civil Engineering, Jordan University of Science and Technology, May 2004.

**Integrated Remote Sensing and GIS Techniques for Landslide Hazard Zonation Along Amman-Jerash-Irbid Highway,** North Jordan, By Mohammed Abdelghafoor, Department of Earth and Environmental Sciences, Hashemite University, August 2005.

**The Effect of Geological Factor on Landuse Planning: The Eastern Shoreline of The Dead Sea as a Case Study,** By Mohammad Aqrabawi, Department of Architect Engineering, Jordan University of Science and Technology October 2005.

**The use of GIS and Remote Sensing Techniques in the optimal landfill site selection: A case study in Azraq Area.** By Ghada Shatnawi, Department of Earth and Environmental Sciences, Al-Albyt University.

**GIS-Based Documentation and Geo-Environmental Assessment of Wadi Ziqlab, North Jordan; Natural and Cultural Resources.** By Mohammad Nabil Sa'ad, Department of Earth and Environmental Sciences, The Hashemite University, Nov. 2009.

## Taught Courses and Training

### Undergraduate Courses

- Geographic Information Systems (GIS).
- Remote Sensing
- Remote Sensing in Archeology
- Computer Applications in Geology
- Computer Applications in Hydrology
- Cartography
- General Geology

Environmental Geology  
Seminar

**Graduate Courses**

Remote Sensing Techniques and applications in Earth Sciences  
Remote Sensing in Environment  
Water Resources in Arid Regions  
Research Methodology

**Training Courses and Technical Workshops**

Introduction to GIS	(30 Hours)
Introduction to Remote Sensing	(30 Hours)
The Use of GIS and Remote Sensing in Hydrology	(10 Hours)
Integrated Watershed Management using GIS	(20 Hours)
Drought Assessment and Mitigation using GIS	(20 Hours)
Urban planning using GIS and Remote Sensing	(20 Hours)
Advance topics in GIS and Remote Sensing	(10 Hours)
Climate Change Impacts Assessment using GIS and Remote Sensing	(10 Hours)

## Computer Skills

Software Developer with more than 10 years' experience in developing Oracle based applications

Developing e-learning courses using Blackboard and Moodle. With ten years of experience at the Hashemite University.

Web designer and developer.

Graphic Designer

## Language Skills

**English** : Excellent (Reading, Writing, Speaking)

**Arabic** : Mother Language

## References

### **Prof. Abudllah Malkawi**

Chancellor, Fahad Bin Sultan University

Tabuk-KSA

[mhusein@fbsu.edu.sa](mailto:mhusein@fbsu.edu.sa)

### **Dr. Jan Adamowski**

Director - Integrated Water Resources Management Program

McGill University

Montreal – Canada

[jan.adamowski@mcgill.ca](mailto:jan.adamowski@mcgill.ca)

### **Prof. Fayez Ahmad**

Dean of Faculty of Natural Resources and Environment

The Hashemite University

Zarqa – Jordan

[fayeza@hu.edu.jo](mailto:fayeza@hu.edu.jo)