

## I. Education

- PhD, (04/2008-01/2012) Geoinformatic, University of Osnabrueck (Germany)  
Thesis title: 3D GIS for urban applications  
Supervisors: Prof Dr Eng. Manfred Ehlers, Prof Dr Eng Sisi Zlatanova (TuDelft Netherlands)
- M.Sc. (08/2004-09/2005) Geographic Information Science, Univ. of Redlands (USA)-ESRI.  
Thesis title: Developing a storm drainage network for the city of Redlands.  
Supervisors: Prof. Karen Kemp, Prof. Mark Kumler.
- Diploma, (04/2003-09/2007) Urban and Regional Planning, An-Najah University (Palestine),
- B.Arch. (09/1994-05/1999) Architectural Engineering, An-Najah University (Palestine).  
Thesis title: A 'comprehensive' school: Architectural designs for participation.  
Supervisor: Dr. Ziyad Sinan.

## II. Employment

- Assistant Prof (02/2012-till now)** Faculty of Engineering, An-Najah University, Palestine.
- Taught “Geographic Information System”, “Planning Studio”, “Cartography”
- Intern** (10/2010-03/2011) 3D team, Environmental System Research Institute (ESRI), Ca, USA
- Research BIM/GIS integration in ArcGIS
  - Organizing and leading the Idea lab for BIM/GIS integration during Geodesign summit 2011
- Research assistance** (04/2008-02/2012) Institute for Geoinformatic and Remote Sensing (IGF), University of Osnabrueck, Germany:
- Developing a 3D Web Campus GIS for the university campus.
- Researcher** (01/2006-09/2007) Centre for Urban And Regional Planning, An-Najah University.  
*City Development Strategies Project:*
- Developing Strategic Plans and a Five-Year Investment Plan for enhanced cooperation and coordination between three Palestinian Municipalities (Al-Bireh, Beitunia, and Ramallah).
  - Using a participatory approach – to develop city strategies, visions and action plans –and empowering citizens and stakeholders to take part in forming the spaces of their cities.
- Public Services Allocation Model:*
- Visiting villages and towns to ask Palestinians what they perceive to be their nearest public (urban) centre. The Wall, constructed in the West Bank by Israel, has forced Palestinians to shift their public centres (for health care, education, employment, etc.). This research would help the Palestinian Ministry of Planning allocate public services to where people most need them, given the forced geographic changes of recent years.
- Intern** (08-12/2005) Educational Services Sector, Environmental Systems Research Institute (ESRI).
- Curriculum development - testing for various courses, including online courses.
  - Assisting in publication development, e.g. The 2006 GIS Dictionary.
- Consultant** (08/2004-09/2005) Municipality of Redlands, California (funded by MSc studentship).
- Completed report on storm water drainage management, involving geodatabase design, data transfer testing (from print maps, tables, and computerized designs), and a customized GIS.
- Lecturer** (02/2003-05/2004) Faculty of Engineering, An-Najah University, Palestine.
- Taught "Drawing for Engineers", "Planning Studio", and "Cartography".

**Fundraiser/Volunteer** (01/2001-05/2003) Goodwill Forum (Multaq Al-Kheir), Palestine

- Wrote proposals and reports for community and social development projects.
- Volunteered for programmes in support of elderly people and Thalassemia patients.

**Project Manager** (01/2001-05/2003) Nablus Urban and Rural Housing Rehabilitation Programme.

- Developed a participatory approach to housing rehabilitation in the West Bank and Gaza.
- Together with a team of three architects, two social workers, and two field assistants, worked with families and individuals to develop their housing spaces.
- Along with local volunteers, the Programme was a joint initiative between the Palestinian Ministry of Social Affairs and the Community Service Centre of An-Najah University.
- Prepared technical reports and budget proposals for housing rehabilitation (based on home visits), and supervised the technicians involved in the restoration work.
- The Programme renovated over 120 homes and provided technical support for 40 others.

**Teaching Assistant** (02/2000-05/2003) Centre for Urban and Regional Planning, An-Najah Univ.

- Assistant taught "Geographic Information Systems," and "Planning Studio".

**Researcher** (02/2000-05/2003) Centre for Urban and Regional Planning, An-Najah Univ.

- Prepared with colleagues the Master Plans for various Palestinian cities, using GIS as a visual tool to share and discuss possible proposals among communities.
- Facilitated public discussions, consultations, home visits, and local problem-solving in order to ensure individual and group concerns were aired and addressed.
- Developed and analysed physical surveys of buildings and structures, using AutoCAD Map, MS Access, and ArcView. Produced maps using CAD Overlay (Softdesk Imaging).

**Architect** (05/1999-01/2000) Nablus Architectural Engineering Office, Palestine.

- Designed commercial/residential buildings, as well as interiors of restaurants, galleries and showrooms.

### III. Professional development

#### Certificates and research training

➤ Certification in 18 courses offered by the Environmental Systems Research Institute (ESRI):

- *GIS mapping and analysis*: ArcGIS I and II; Arc GIS Cartography; Advanced Analysis with ArcGIS; Extending the ArcGIS Desktop Applications.
- *Spatial analysis*: Spatial Analyst; ArcIMS; Working with ArcGIS Spatial Analyst for Geospatial Intelligence.
- *Database management for GIS*: Geodatabase Design Concepts; Building Geodatabases I and II; Modeling Geodatabases Using CASE Tools; Multi-User Geodatabase Concepts; Managing Versioned Geodatabases).
- *Programming for GIS*: Programming ArcObjects with VBA; Geoprocessing Scripts Using Python; System Architecture Design for GIS; SDE for Oracle.

#### Other computing skills

- Project proposals and planning (MS Project).
- Geographic Information Systems (ArcView 3.3, Arc 8.3, 9.0-9.2, SDE ArcPad, Trimble GPS)
- Business and technical diagramming (Microsoft Visio).
- Computer-aided design (AutoCAD, AutoCAD Map).
- Word processing, spreadsheets, databases, presentations (Word, Excel, Access, PowerPoint).
- Programming (Visual Basic, Visual Basic for Applications, Microsoft .NET, Python, UML, PlpgSQL, C++).
- Spatial-DBMS (PostgreSQL, Oracal)

- Web programming (Apache, UMN map server, ArcIMS, Degree, PHP, HTML, Java script)
- Web Map Service (WMS), Web perspective service (WPVS), Web feature service (WFS).
- IFC, CityGML, KML, VRML.

#### **Awards**

- ESRI International Internship Program (11/2010-2/2011), Redlands, California.
- Best paper award 5<sup>th</sup> 3D GeoInfo 2010 Technical university of Berlin TuBerlin, Germany
- COST action TU0801 “Semantic enrichment of 3D city models for sustainable development” (www.semcity.eu)
- DAAD (04/2008-02/2012), Osnabrueck, Germany
- Environmental Systems Research Institute (ESRI) Travel Award (2006).
- ESRI International Internship Program (05-12/2005), Redlands, California.
- Presidential Scholarship Program (08/2004-09/2005), Academy for Educational Development.
- Canadian International Development Agency (CIDA) and McGill University Travel Award (2001).

#### **Membership of professional and other institutions**

- Jordanian Association of Engineers (Jerusalem Branch), 1999-present.
- Al-Awda, the Palestinian Right to Return Coalition, 2005.

## **IV. Publications**

### **Refereed Journal Papers:**

Hijazi, I., Ehlers, M., Zlatanova, S. (2012): NIBU: a new approach to representing and analysing interior utility networks within 3D geo-information systems. In: International Journal of Digital Earth, Volume 5, Issue 1, pp. 22-42, Taylor & Francis.

Hijazi, I., Zlatanova, S., Ehlers, M., (2011): An integrated framework for representing the relation among building structure and interior utilities in micro-scale environment. In: Geo-spatial Information Science (GSIS). Volume 14, Issue 2. Springer.

El-Mekawy M, Östman A, Hijazi I (2012): An Evaluation of IFC-CityGML Unidirectional Conversion, In: International Journal of Advanced Computer Science and Application (IJACSA). Volume 3, Issue 5, pp. 159-171, The Science and Information (SAI) organization.

El-Mekawy M., Östman A., Hijazi I. A Unified Building Model for 3D Urban GIS. ISPRS International Journal of Geo-Information. 2012; Volume 1, Issue 2, pp.120-145, MDPI.

### **Scientific Articles:**

Hijazi, Ihab, Ehlers, M, Making Cities Smarter, Geospatial Today, 10 December 2011.

Hijazi, Ihab, Ehlers, M, Zlatanova, S., BIM for Geo-Analysis (BIM4GeoA), V1 Magazine, 11 November 2010.

### **Book Chapters:**

Hijazi, M. Ehlers, S. Zlatanva, T. Becker and L. van Berlo Initial investigations for modeling interior Utilities within 3D Geo Context: Transforming IFC- interior utility to CityGML/UtilityNetworkADE In: Advances in 3D Geo-Information Sciences, pp. 95-113 (best paper award)

### **Refereed Conference Papers:**

Hijazi, M. Ehlers and S. Zlatanova BIM for Geo-Analysis (BIM4GEOA): Set Up of 3D Information System with Open Source Software and Open Specification (OS) In: T.H. Kolbe, G. König, C. Nagel (Eds.); International Conference on 3D Geoinformation, Berlin, November 2010, The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XXXVIII-4/W15, pp. 45-49 (best paper award)

Manfred Ehlers and Ihab Hijazi, "Prototype application for web 3D routing in building", Proc. SPIE 7840, 784016 (2009); doi:10.1117/12.872838.

Hijazi, I. & Ehlers, M. 2009. 3D web requirement: A case study for the University of Osnabrück, Proceedings of the 6th International Summit of Digital Earth, 9-12 September, Beijing, China (CD-Publikation)..

Hijazi, I., Ehlers, M., Zlatanova, S. & Isikdag, U. 2009. IFC-CityGML transformation framework for geo-analysis: A water utility network case, Proceedings of the 4th 3D GeoInfo Workshop, 3-4 November, Ghent, Belgium, pp 83-90.

Ehlers, M. and I. Hijazi, 2009. 3D Web GIS Campus requirements: A Case Study for the University of Osnabrück. In: Reinhardt, W., A. Krüger, M. Ehlers (Eds.), 2009. Geoinfor-matik 2009, Konferenzband, ifgiprints 35, Münster, p. 233.

Hijazi, I. and M. Ehlers, 2009. Web 3D Routing in and between Buildings. Proceedings, Fourth National GIS Symposium, May 4-6, 2009, Al-Khobar, Saudi Arabia (CD Publica-tion), 11 pp.

Hijazi I. et. al 2011: Simplifying and exchanging utility network using 3d city models. ISDE (Accepted)

### **Refereed Conference Abstracts**

Ehlers, M. and I. Hijazi, 2009. 3D Web GIS Campus requirements: A Case Study for the University Osnabrück. In: Reinhardt, W., A. Krüger, M. Ehlers (Eds.), 2009. Geoinfor-matik 2009, Konferenzband, ifgiprints 35, Münster, p. 233.

Hijazi,I & Kemp, K. 2005. Storm Drainage Netwrok for the city of Redlands, California, Proceedings of ESRI International User Conference, San Diego, Ca, USA