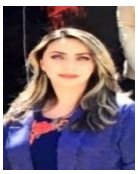
Curriculum Vitae (CV)



Personal Details	
Full Name: **Dr. Fanar Mansour Abed**	Title: **Assistant Professor**
Place of Birth: Baghdad	Gender: Female
Telephone No.:	E mail: fanar.mansour@coeng.uobaghdad.edu.iq fanarmansour0@gmail.com fanar_mansour@yahoo.com
Place of work: College of Engineering/ University of Baghdad	Occupation: Baghdad/ Iraq
Bachelor Degree (IRAQ)	
University Name: Baghdad University/Iraq	College Name: College of Engineering
Department: Surveying Engineering	Expertise: Surveying (Geomatics) Engineering General
Master Degree (IRAQ)	
University Name : Baghdad University/ Iraq	College Name: College of Engineering
Department Name: Surveying Engineering Department	
Subject & Title of Dissertation: Digital Photogrammetry 'Accuracy assessment of digital and analytical aerial triangulation'	
PhD Degree (UK)	
University Name : Newcastle University/ UK	College Name: School of Civil Engineering and Geosciences
Department Name: : Civil Engineering	Expertise: Laser Scanning & Digital Photogrammetry
Subject & Title of Thesis: Laser scanning 'Calibration of full-waveform aerial laser scanning data for 3D object segmentation'	

Academic Experience

Teaching Experience:

1. Lecturing: (Title) Assistant Prof. (2017 and still)
   Organization: University of Baghdad / College of Engineering / department of Surveying.
   Description: Teaching postgraduate and undergraduate students (Photogrammetry and Laser scanning)
   Supervising MSc degree students
   Supervising BSc student graduation projects
   Reviewer in many local and International scientific journals
   Researcher (photogrammetry and laser scanning)
   Project Manager in several local projects
   Chairing scientific committees in several conferences
   Head of department assistance for postgrad study (2013)
   Head of Surveying Engineering department (2013-2015)

2. Demonstrator in SVY3009 Module (TerraScan & laser scanning processing)
   Civil Engineering and Geosciences school/Newcastle University/ Newcastle/ UK.
3. Demonstrator in SVY2009 Module (photogrammetric instrumentation)
   Civil Engineering and Geosciences school/Newcastle University/ Newcastle/ UK.
4. Demonstrator in SVY2009 module (Remote sensing)
   Civil Engineering and Geosciences school/Newcastle University/ Newcastle/ UK.
5. Demonstrator in SVY2008 Module (Remote sensing project)
   Civil Engineering and Geosciences school/Newcastle University/ Newcastle/ UK.
6. Demonstrator in SVY1006 Module (Photogrammetry and remote sensing)
   Civil Engineering and Geosciences school/Newcastle University/ Newcastle/ UK.
7. Reviewer (Laser Scanning applications in geomorphology Journal) - 2010
   (LS2011 conference Calgary University/ Canada) – 2011
   (IEEE_Geoscience_and_Remote_Sensing_Letters_USA) -2012
   (Journal of Engineering University of Baghdad) – 2013
8. A member of Morpeth Flooding project (Newcastle University and Environmental Agency).
9. Member of Condor-Mat lab Project (Newcastle University and the Digital Institute).
10. Organizing Committee (PGR 2011 School of Civil Engineering and Geosciences Conference_NCL_UK).
11. Mentoring PhD student _NCL_UK.
12. Lecturing two lectures (one for undergrad and the other for staff member) in School of Civil Eng. and Geosciences_NCL_UK.

Practical Skills:

Technical: • Field Surveying • Cadastral Surveying • Cadastral Planning • UAV mission Planning • CRP project Planning • TLS project Planning
I.T.: TerraScan & related family, 3D Re-constructor (for laser scanning processing), LasTools, QT Modeller, ArcGIS, Arc view, Map info, AutoCAD, MatLab, Erdas (LPS), PhotoScan (Agisoft), PhotoModeler, Envi, Cloud Compare , Pix4D Mapper, Revit, 3D Reconstructor, SocetSet, Photoshop, Surfer, Microsoft Office, and many other application programs.

Membership and scientific acheivements:

- ✓ Union of Iraqi Engineers.
- ✓ PLS Research team in civil engineering and geoscience school/ Newcastle University/UK (2008-2013).
- ✓ CESER (Center for Earth Systems Engineering Research) (2008-2013).
- ✓ ISPRS student consortium (ISPRS-SC).
- ✓ Geospatial Engineering team in Civil Engineering and Geosciences School/ Newcastle University (2010-2013).
- ✓ Programming for Researchers in Newcastle University (2011-2013).
- ✓ Scientific editorial board of the OGBD International journal.
- ✓ Scientific editorial board in College of Engineering Journal.
- ✓ CIPA Heritage Documentation (The international committee of architectural photogrammetry/ the international committee for documentation of cultural heritage).
- ✓ Honorary academic member of the University of Exeter, UK.
- ✓ External consultant in Liverpool University, school of architecture, UK.

Awards:

- ➢ The award of the best PhD thesis in the UK in Photogrammetry and Remote Sensing society presented through the RSPSoc, 2013.
- ➢ The award of the best poster in Geomatic Engineering in PGR competition within the school of Civil Engineering, 2010.
- ➢ The award of one of the best top papers participated in CAJG international conference of Arabian journal of Geosciences/ Tunisia/ 2018.

Practical and field Projects

- ✓ Morpeth Flooding 3D modeling project, Newcastle University in collaboration with the Environmental Agency in the UK, 2009.
- ✓ Condor-Matlab Project (Newcastle University in collaboration with the Digital Institute in the UK, 2010.
- ✓ Water Supply Loan Project in Mid-Western Iraq IQ-P13- HADITHA, Pell Frischmann advisor, 2013.
- ✓ The deflection in flag pole in the entrance of Baghdad University campus and solution, 2014.
- ✓ Al-Kushla/Baghdad topographic surveying project with laser scanning, 2015.
- ✓ Al-Kadhimia Shireen project to compute the minaret's deflection and structure deformations using terrestrial laser scanning and photogrammetry, 2014-2015.
- ✓ New Technologies in Archeological Survey to Document and Discover the Ruins of the Ancient Babylonian City in IRAQ – A National Project to Support the International Community to Protect the Ruins of the Oldest Civilization in the History and Include it to the International Heritage List, a cooperation with the World Monument Fund project, 2017 and still.
- ✓ Aerial photogrammetry planning and modeling using low-cost UAV platform, 2018.
- ✓ 3D city modeling and object extraction, 2018.
- ✓ Terrestrial laser scanning and photogrammetry for cultural heritage documentation, 2018.
- ✓ Virtual reality and BIM extraction using Matterport 3D camera, 2018-2019.
- ✓ Range difference dependency using Image and laser based geospatial techniques, 2018-2019.
- ✓ Data fusion from different sensors towards better 3D data modelling, 2019.
- ✓ Reverse Engineering for cultural and architectural heritage conservation, 2019.
- ✓ Stereo photogrammetry as alternative technique to radiant CT scan imaging for medical applications, 2019.
- ✓ Geodetic network smart modeling and adjustment to monitor movements in Derbendekhan dam in north of Iraq, 2019.
- ✓ HBM extraction of UR Ziggurate from UAV-Photogrammetry, 2019-2021.
- ✓ Automatic extraction of cadastral mapping using Trimble e-Cognition software, 2019-2021.
- ✓ Medical photogrammetry for human body restoration, partnership with Paulista University, Brazil, 2020-2022.

- ✓ Co-registration of multi RS datasets for smart city applications, partnership with Leica Geosystem company, 2020-2022.
- ✓ Printgrammetry approach assessment using 3D google Earth imagery service, 2019-2021.
- ✓ Mobile mapping using Topcon IPS-2 in metropolitan cities, Partner with Topcon company, 2020-2021.
- ✓ Reverse Engineering of UAV flight plan application to extract 3D point clouds from Google Earth 3D imagery service.
- ✓ Comparative analysis of SfM photogrammetric software, partnership with Al-Muthana University, 2021.
- ✓ Remote sensing techniques and data analysis to extract new hiding features in archeological sites, Partnership with Exeter University, 2020-2023.
- ✓ Archeological new findings in Babylon old city in Iraq using SfM UAV photogrammetry and RS analysis, Partnership with Exeter University, 2020-2021.
- ✓ Digitally-aided documentation and analysis of historical vaulted structures in Iraq, Partnership with Liverpool University, 2020-2024.
- ✓ RS techniques integration to document cultural heritage cites in IRAQ from an architecture perspective, Partnership with Architecture department, UOB, 2021-2023.
- ✓ Technical RS approach to document and investigate the new archeological cite discovered in AL-Adamia/Baghdad cite in 2020, 2020-2023.

Research Experience

Publications:

1. Fanar M. Abed (2004), Digital Aerotriangulation, Engineering Journal, Baghdad, Iraq.
2. Fanar M. Abed (2005), Digital technology in photogrammetry, Engineering Journal, Baghdad, Iraq.
3. Fanar M. Abed (2006), Aerotriangulation by coplanarity, Engineering Journal, Baghdad, Iraq.
4. Fanar M. Abed (2008), Digital Orthophoto Production Using Close-Range Photographs For High Curved Objects, Engineering Journal, Baghdad, Iraq.
5. Bashar Saleem, Fanar Mansour, and Maitham Mutashar (2009) Analytical Photogrammetry (book).
6. 'Radiometric calibration of full-waveform ALS data based on local incidence angle in natural terrain' - The proceedings of RSPSoc 2010

conference, Cork, Ireland.

7. 'Processing data intensive matlab jobs through Condor' - The proceedings of AHM 2010 Conference, Cardiff, Wales, UK
8. 'Radiometric calibration of full-waveform lidar data' - The proceedings of CEG PGR school Conference 2010, Civil Eng. and Geosciences school in Newcastle University, UK.
9. 'Robust adjustment of multi-source remote sensing data set using additional constraints' - The proceedings of CEG PGR school Conference 2009, Civil Eng. and Geosciences school in Newcastle University, UK.
10. 'Echo Amplitude Normalisation of Full waveform Airborne Laser Scanning Data Based on Robust Incidence Angle Estimation' IEEE Transactions in Geosciences and Remote Sensing Journal 2012.
11. ' Calibration of full-waveform ALS data based on robust incidence angle estimation' - The international archives of photogrammetry, remote sensing and spatial information, LS2011, Calgary, Canada.
12. 'Calibration of full-waveform aerial laser scanning data for 3D object segmentation' – thesis 2012 – NCL Univ_UK.
13. 'Processing intensive full-waveform aerial laser scanning matlab jobs through Condor' - Internet of Things and Cloud Computing Journal – 2013.
14. 'Potential of incidence angle on the radiometric calibration of full-waveform aerial laser scanning in urban areas' - Ameriacn Journal of Remote Sensing – 2013.
15. Fanar M. Abed, "The efficiency of 3D laser scanning as a modern remote sensing technique" , المؤتمر الدولي للعلوم الهندسية ، 27 اذار 2014 ، الجامعة المستنصرية.
16. Fanar M. Abed, Jon P. Mills, Pauline, E. Miller, 2014, "Calibrated full-waveform aerial laser scanning for 3D object segmentation", Remote sensing Journal, 1, 6, 4109-4132 p.
17. Rawaa Abdul Jabar, Fanar M. Abed & Loay Edwar, "Improved Automatic Registration Adjustment of Multi-Source Remote Sensing Datasets", Engineering Journal, Volume 21, No. 4, 2015.
18. Fanar Mansour & Noor Samir Sadiq, "DTM Generation from Full-Waveform aerial laser scanning Data", Engineering Journal, Volume 21, No. 5, 2015.
19. Fanar M. Abed, Omar Ali Ibrahim, Luma Khalid Jasim, Yousif Hussain Khalaf, Hassan Mehdi Hameed & Zahraa Azeldeen Hussain, " Terertrial Laser Scanning to Preserve Cultural Heritage in Iraq Using Monitoring Techniques" , The second BCEE2 Conference\AUB\Lebanon2015.

20. Marwa M. Boori, Fanar M. Abed, “Correcting lidar intensity signal for target detection applications”, Arab Universities Union Journal, 2016.
21. Mohammed Jaafar, Fanar M. Abed, Mohammad, S. Altaie, “Lidar Pulse Detection Efficiency Using Fractal Geometry”, Engineering Journal, 2016.
22. Marwa M. Boori, Fanar M. Abed, “Lidar intensity normalization to improve automatic processing of object recognition”, Arab Universities Union Journal, Volume 2, No. 23, 2016, 17-23pp.
23. Fanar M. Abed and Mohsin M. Shanoer, “Evaluate Registration Process of Close-Range Terrestrial Laser Scanning for Cultural Heritage Documentation”, 2016 IEEE young professionals conference on remote sensing, Germany.
24. Ahmed K. Jebur, Fanar M. Abed and Mamoun U. Mohammed1 “Assessing the Performance of the Commercial Agisoft PhotoScan Software to Deliver Reliable Data for Accurate 3D Modelling”, MATEC Web of Conferences 162, 03022 (2018), BCEE3-2017.
25. Marwa M. Boori, Fanar M. Abed “The Powerful of Lidar Geospatial Technology to Improve Target Detection Techniques”, Planning and Development Journal, Special Issue of the 2nd International Conference of GIS and Geospatial Technologies, 2017, 169-179 pp.
26. Mohsin M. Shanoer , Fanar M. Abed, “Evaluate 3D Laser Point Clouds Registration for Cultural Heritage Documentation”, The Egyptian Journal of remote sensing and space sciences, 21, (2), 2018.
27. Fanar M. Abed, Mamoun U. Mohammed, Saif J Kadhim, “Architecture and cultural heritage conservation using low-cost cameras”, Applied research journal, Vol 3, issue 12, 2017.
28. Hassan H. Ali, Fanar M. Abed, “The impact of UAV flight planning parameters on topographic mapping quality control” ICSET 2019 conference, IOP Conf. Series: Materials Science and Engineering, 518 (2019) 022018.
29. Fanar M. Abed, “Correlation between surface modeling and pulse width of fwf lidar”, chapter book, advances in remote sensing and geoInformatics applications, 147-149, 2019.
30. Riyam H. Hadi, Fanar M. Abed, Mustafa T. Mustafa, “Virtual Reality Urban Modeling from Hybrid Image-based Sensors”, Scholars Journal of Engineering and Technology, (2019), 7(5): 180–188.
31. Abbas S. Jaber and Fanar M. Abed, “Revealing the potentiality of 3D modelling techniques; a comparison study towards data fusion from hybrid sensors”, IOP Conf. Series: Materials Science and Engineering,

Volume 737, 2020.

32. Zahraa S Thamir and Fanar M Abed, “How geometric reverse engineering techniques can conserve our Heritage; a case study in Iraq using 3D laser scanning”, IOP Conf. Series: Materials Science and Engineering, Volume 737, 2020.
33. Doaa A. Hussein, Fanar M. Abed, and Alaudeen A. Hassan, “Stereo photogrammetry vs computed tomography for 3D medical measurements", Karbala International Journal of Modern Science, Volume 5, Issue 4, 2020.
34. Hussein R. Sarha and Fanar M. Abed, “The feasibility of using UAV structure from motion photogrammetry to extract HBIM of the great Ziggurate of UR”, IOP Conf. Series: Materials Science and Engineering, 2021 accepted.
35. Israa Kadhim and Fanar M. Abed, “The potential of Lidar and UAV-Photogrammetric data analysis to interpret archeological sites: A Case study of Chun Castle in south-west England”, ISPRS International Journal of Geo-Information, 10 (1), 41, 2021.

Reviewing and scientific achievements:

- ✓ Reviewer in IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing International Journal.
- ✓ Reviewer in IEEE_Geoscience_and_Remote_Sensing_Letters_USA.
- ✓ Reviewer in Laser Scanning applications in geomorphology Journal.
- ✓ Organizing committee member in ISPRS Symposium V 2010 'Close Range Image Measurement Techniques'.
- ✓ Scientific committee member in LS2011 conference Calgary University/ Canada.
- ✓ Scientific committee member in 2014 IEEE International Geoscience & Remote Sensing Symposium (IGARSS 2014).
- ✓ Scientific committee member in The 35th Canadian Symposium on Remote Sensing.
- ✓ Scientific committee member in BCEE2 international conference, Lebanon, 2015.
- ✓ Scientific Committee Chair of the 2nd International conference in GIS & Geospatial technologies, Baghdad, IRQ, 2016.
- ✓ Reviewer in IGARSS 2016 conference, China.
- ✓ Reviewer in the Engineering journal, Baghdad, Iraq.

- ✓ Reviewer in the Engineering & Technology journal, Baghdad, Iraq.
- ✓ Scientific committee member in BCEE3 international conference, Egypt, 2017.
- ✓ Scientific committee member in the conference of the Engineering College and IEEE-Iraq, 2017.
- ✓ Scientific committee member in the conference of Technical Engineering conference, 2017.
- ✓ Scientific committee member in IEEE/GRSS International symposium, Texas, USA, 2017.
- ✓ Reviewer in ISPRS Journal of Photogrammetry and Remote Sensing, 2018 to present.
- ✓ Reviewer in ICCES 2018 in Civil Engineering Conference.
- ✓ Reviewer in CAJG 2018 Conference, Tunis.
- ✓ Reviewer in Kufa Journal of Engineering.
- ✓ Reviewer in Engineering and sustainable Development Journal.
- ✓ Scientific committee member in 2018 IEEE International Geoscience & Remote Sensing Symposium (IGARSS 2018), Valencia, Spain.
- ✓ Reviewer in ICOASE2018 Conference, Zakho, Dohook, IRQ.
- ✓ Reviewer in ICSET 2019 Conference, Baghdad, IRQ.
- ✓ Scientific committee member in 2019 IEEE International Geoscience & Remote Sensing Symposium (IGARSS 2019), Japan.
- ✓ Reviewer in BCEE4 international conference, Turkey, 2019.
- ✓ Reviewer in the international conference on sustainable Engineering techniques, Baghdad, 2019.
- ✓ Appointment as an Honorary Associate Professor from 13 July 2020 to 13 July 2023 in the College of Life & Environmental Sciences, UK.
- ✓ Reviewer in STEPS conference, Liverpool John Moores University with a partnership of Tikrit University, 2020.
- ✓ Reviewer in Journal of Dohok University, 2020.
- ✓ Editorial member in the Journal of Engineering, Baghdad University, since 2019.
- ✓ Reviewer in Iraqi Journal of Science, Baghdad, 2021.
- ✓ External consultant in Liverpool University, school of architecture, UK, 2020 to 2024.

Supervision / Postgraduate Studies:

1. CLASSIFICATION OF FULL-WAVEFORM AERIAL LASER SCANNING DATA TO IMPROVE

THE DIGITAL TERRAIN MODEL (DTM), SURVEYING ENGINEERING, UNIVERSITY OF BAGHDAD, NOOR SAMEER SADIQ, 2014.

2. AN IMPROVED AFFAIN TRANSFORMATION BASED METHOD FOR SATELLITE IMAGE REGISTRATION, SURVEYING ENGINEERING, UNIVERSITY OF BAGHDAD, Rawaa AbdulJabbar Mohammed, 2014.
3. SIGNAL PROCESSING OF FULL-WAVEFORM AERIAL LASER SCANNING DATA USING FRACTAL GEOMETRY, SURVEYING ENGINEERING, UNIVERSITY OF BAGHDAD, Mohammed Jaafar Kzar, 2015.
4. LIDAR INTENSITY CORRECTION TO IMPROVE AUTOMATIC PROCESSING OF OBJECT RECOGNITION, SURVEYING ENGINEERING, UNIVERSITY OF BAGHDAD, MARWA MOHAMMED BORI, 2016.
5. 3D CULTURAL HERITAGE DOCUMENTATION USING TERRESTRIAL LASER SCANNING TECHNOLOGY, SURVEYING ENGINEERING, UNIVERSITY OF BAGHDAD, MUHSIN MOHAMMED SHANWER, 2017.
6. 3D CITY MODELING USING DIGITAL PHOTOGRAMMETRIC TECHNIQUES, TECHNICAL ENGINEERING COLLEGE, AHMED KAREEM JABER, 2018.
7. THE FEASIBILITY OF USING LOW-COST PHOTOGRAMMETRY FOR 3D DOCUMENTATION OF ARCHITECTURE AND CULTURAL HERITAGE SITES, TECHNICAL ENGINEERING COLLEGE, SAIF JAWAD, 2018.
8. 3D OBJECT RECONSTRUCTION USING IMAGE-BASED TECHNIQUES FOR MEDICAL APPLICATIONS, TECHNICAL ENGINEERING COLLEGE, DOAA AWDA HASSAN, 2019.
9. THE INTEGRATION OF MULTI-SOURCE PHOTOGRAMMETRIC DATASETS FOR VIRTUAL 3D CITY MODELLING APPLICATIONS, TECHNICAL ENGINEERING COLLEGE, REYAM HASSAN HADI, 2019.
10. MOBILE TOPOGRAPHIC MAPPING USING LOW-COST UAV SYSTEM, SURVEYING ENGINEERING, UNIVERSITY OF BAGHDAD, HASSAN HADI ALI, 2019.
11. THE FUSION OF LASER SCANS AND DIGITAL IMAGES FOR EFFECTIVE CULTURAL HERITAGE CONSERVATION, COLLEGE OF ENGINEERING, UNIVERSITY OF BAGHDAD, ABBAS SHAMKI, 2020.
12. LASER-BASED REVERSE ENGINEERING FOR CULTURAL HERITAGE RESTORATION AND PRESERVATION, COLLEGE OF ENGINEERING, UNIVERSITY OF BAGHDAD, ZAHRAA SAMEER, 2020.
13. PRODUCTION OF HERITAGE BUILDING INFORMATION MODEL (HBIM) FOR GREAT ZIGGURUT OF UR, COLLEGE OF ENGINEERING, UNIVERSITY OF BAGHDAD, HUSSEIN RIYADH, CURRENT.
14. AUTOMATIC EXTRACTION OF UAV-BASED CADASTRAL MAPPING, COLLEGE OF ENGINEERING, UNIVERSITY OF BAGHDAD, HUSSEIN FLAYEH, CURRENT.
15. THE VALUE OF STEREO-PHOTOGRAMMETRY AND 3D PROTOTYPE PRINTING FOR PLASTIC AND RECONSTRUCTIVE SURGERY- PRACTICAL CASE STUDIES USING REVERSE ENGINEERING TECHNIQUES, UNIVERSITY OF BAGHDAD, COLLEGE OF ENGINEERING, MOHAMMED RAHMAN, CURRENT.
16. HYBRID 3D MODEL EXTRACTION OF A COMPOUND RESIDENTIAL BLOCK BY COMBINING

TERRESTRIAL LASER SCANNING WITH UAV-PHOTOGRAMMETRY, UNVERSITY OF BAGHDAD, COLLEGE OF ENGINEERING, MOHAMMED GANIM, CURRENT.

17. 3D POINT CLOUDS GENERATION FROM GOOGLE EARTH IMAGERY USING PRINTGRAMMETRY TECHNIQUE AND SFM ALGORITHM, TECHNICAL ENGINEERING COLLEGE, HUSSEIN KAREEM, CURRENT.