DR DAVOOD SHOJAEI

Address: Centre for SDIs and Land Administration, The University of Melbourne, VIC, 3010
Email: shojaeid@unimelb.edu.au; Tel: (+61) 4 2626 5751

CAREER OVERVIEW

As a senior lecturer at the University of Melbourne, I have a well-developed background in Geospatial Information Systems (GIS), urban land administration, land surveying and 3D visualisation. During the past 15 years, I have been involved in many projects in different organisations as a project manager, consultant or researcher. My area of research includes 3D cadastre, land administration, 3D visualisation, Building Information Modelling (BIM) and Digital Twin.

Key Strengths

- Significant experience in research and teaching;
- More than eight years of experience in project management and spatial consultancy, leading to well-developed skills in preparing, coordinating, conducting and assessing spatial projects;

EDUCATION AND QUALIFICATIONS

2010 - 2014	**PhD - Urban Land Administration (Geomatics)** *Centre for Spatial Data Infrastructures & Land Administration, Department of Infrastructure Engineering, the University of Melbourne, Australia* ***Research Topic**: 3D Cadastre Visualisation*
2003 - 2006	**Master of Science - Surveying Engineering (Photogrammetry)** *Faculty of Geomatics Eng. KNT University of Technology, Tehran, Iran* ***Research Topic**: Optimisation of Delaunay Triangulation for Terrain Modelling*
1999 - 2003	**Bachelor of Science - Surveying Engineering** *Geomatics Dept., Tabriz University, Tabriz, Iran*

TEACHING EXPERIENCE

Since 2019	**Senior Lecturer** The University of Melbourne **Subjects**: Surveying and Mapping, Information Visualisation
Since 2014	**Invited Lecturer** The University of Melbourne **Subjects**: Spatial Data Infrastructures (SDI), Land Development
2011-2014	**Coordinator, Lecturer and Tutor** The University of Melbourne **Subjects**: Spatial Data Infrastructures (SDI), Sustainable Infrastructures Systems (SIS), and Engineering Site Characterisation.
2004 - 2008	**Part-time Lecturer** KNT University of Technology, Azad University Ghazvin Branch, Azad University Maybod Branch, Maybod Technical & Vocational Training Organisation, Azad University Khomeini Shahr Branch, Azad University Najafabad Branch **Subjects**: GIS, Land Surveying, Software and Surveying Instruments, Photogrammetry, and Cartography.

WORK EXPERIENCE

Mar 2020 - Jun 2022	**Job title:** Board Member of the Surveying Taskforce **Organisation**: The Surveying Taskforce
Since Nov 2019	**Job title:** Board Member of the Surveyors Registration Board of Victoria (SRBV) **Organisation**: The Surveyors Registration Board of Victoria
Since Aug 2019	**Job title:** Senior Lecturer **Organisation:** The University of Melbourne **Duties and Responsibilities:** • Teaching Geomatics subjects • Supervising students in PhD and MSc degree • Collaborating on various research and practical projects • Preparing research proposals • Helping in administrative duties in the department

Jun 2014 - Aug 2019	**Job title:** 3D specialist **Organisation**: Land Use Victoria, Department of Environment, Land, Water & Planning Level 9, 2 Lonsdale Street, Melbourne, T: 03 9194 0533 **Duties and Responsibilities:** • Leading 3D Digital Cadastre Research • Implementing and enhancing the ePlan services
Oct 2010 - Jun 2014	**Job title:** PhD Candidate **Organisation**: Centre for Spatial Data Infrastructures & Land Administration, the University of Melbourne **Duties and Responsibilities:** • Investigating 3D Digital Cadastre Visualisation • Lecturing and Tutoring
Mar 2010 - Sep 2010	**Job title:** PhD Candidate **Organisation**: ITC, Twente University, the Netherlands **Duties and Responsibilities:** • Processing LiDAR and MLS point clouds for DTM creation
Feb 2007 - Feb 2010	**Job title:** Project Manager (Spatial Data Manager) **Organisation**: Statistics, Information and Communication Technology of Isfahan Municipality **Duties and Responsibilities:** **Project manager of the following main projects:** • Implementing Spatial Data Infrastructures of Isfahan Municipality. • Designing a Methodology for Urban Map Updating Using Aerial and Satellite Images. • GIS strategy of Isfahan Municipality. • Implementing a Spatial Database of Isfahan Municipality. • GIS-Ready of Isfahan Municipality Maps. **Consultant in the following main projects:** • Developing a WebGIS system for Isfahan Municipality. • Developing an Automatic Vehicle Location for Isfahan Bus Driving System. • Using GIS in Firefighting System of Isfahan Municipality. **Achievements:** • Budget management for various projects (up to $400,000). • Improved the map updating process in Isfahan municipality. • Spatial enablement of Isfahan municipality. • Projects completed by the deadlines.
Feb 2006 - Feb 2007	**Job title:** Manager of GIS Section (Project Manager) **Organisation**: Afraz Naghshe Aria consulting Eng. Co. **Duties and Responsibilities:** **Project manager of the following main projects:** • Compiling the 1:2000 cadastre map of Palesjan River and establishing GIS. • Compiling the 1:200 maps in Abarkou villages and establishing GIS. • Compiling the 1:2000 map of Zavareh city. • Compiling the 1:2000 map of Ardestan city.

PUBLICATIONS

Journal Papers

1. Abdul Muthalif, M.Z., **Shojaei, D.** & Khoshelham, K. 2024. Interactive Mixed Reality Methods for Visualization of Underground Utilities. *PFG – Journal of Photogrammetry, Remote Sensing and Geoinformation Science*, doi: https://doi.org/10.1007/s41064-024-00295-x.
2. Jafary, P., **Shojaei, D.**, Rajabifard, A. & Ngo, T. 2024. Automated land valuation models: A comparative study of four machine learning and deep learning methods based on a comprehensive range of influential factors. *Cities, 151*, 105115, doi:https://doi.org/10.1016/j.cities.2024.105115.
3. Jafary, P., **Shojaei, D.**, Rajabifard, A. & Ngo, T. 2024. Automating property valuation at the macro scale of suburban level: A multi-step method based on spatial imputation techniques, machine learning and deep learning. *Habitat International, 148*, 103075, doi:https://doi.org/10.1016/j.habitatint.2024.103075.
4. Adibi, S., Rajabifard, A., **Shojaei, D.** & Wickramasinghe, N. 2024. Enhancing Healthcare through Sensor-Enabled Digital Twins in Smart Environments: A Comprehensive Analysis. *Sensors* 2024, *24*, doi:10.3390/s24092793.
5. Jafary, P., **Shojaei, D.**, Rajabifard, A. & Ngo, T. 2024. BIM and real estate valuation: challenges, potentials and lessons for future directions. *Engineering, Construction and Architectural Management, 31, 4*, 1642-1677, doi:10.1108/ECAM-07-2022-0642.

6. Emamgholian, S., Pouliot, J. & **Shojaei, D.** 2024. A conceptual framework for automatic modelling and conflict detection of 3D land-use regulation restrictions to support issuing planning permits. *Land Use Policy, 137*, 106972, doi:https://doi.org/10.1016/j.landusepol.2023.106972.
7. **Shojaei, D.**, Badiee, F., Olfat, H., Rajabifard, A. & Atazadeh, B. 2023. Requirements of a data storage infrastructure for effective land administration systems: case study of Victoria, Australia. *Journal of Spatial Science, 68, 3*, 431-449, doi:https://doi.org/10.1080/14498596.2022.2027291.
8. Han, T., **Shojaei, D.**, Fitzpatrick, P., Sakurai, T. & Evans, J. 2023. Urban 5G MmWave networks: Line-of-sight probabilities and optimal site locations. *Journal of Telecommunications and the Digital Economy, 11, 1*, 107-130, doi:https://doi.org/10.18080/jtde.v11n1.640.
9. Burns, A.F., Rajabifard, A. & **Shojaei, D.** 2023. Undertaking land administration reform: Is there a better way? *Land Use Policy, 132*, 106824, doi:https://doi.org/10.1016/j.landusepol.2023.106824.
10. Muthalif, M.Z.A., **Shojaei, D.** & Khoshelham, K. 2022. A review of augmented reality visualization methods for subsurface utilities. *Advanced Engineering Informatics, 51*, 101498, doi:https://doi.org/10.1016/j.aei.2021.101498.
11. Rajabifard, A., Atazadeh, B., Kalantari, M., Olfat, H., **Shojaei, D.** & Badiee, F. 2021. Design and development of an LADM-driven 3D Land administration system: Lessons learned in Malaysia. *Land Use Policy, 102*, 105252, doi:https://doi.org/10.1016/j.landusepol.2020.105252.
12. Olfat, H., Atazadeh, B., Badiee, F., Chen, Y., **Shojaei, D.** & Rajabifard, A. 2021. A Proposal for Streamlining 3D Digital Cadastral Data Lifecycle. *Land, 10, 6*, 642, doi:https://doi.org/10.3390/land10060642.
13. Faraji, M., Nadi, S. & **Shojaei, D.** 2021. Spatial-Temporal Prediction of PM2. 5 Pollutants Using Deep Recurrent Networks: A Case Study of Tehran. *Journal of Geomatics Science and Technology, 10, 3*, 13-26.
14. Emamgholian, S., Taleai, M. & **Shojaei, D.** 2021. Exploring the applications of 3D proximity analysis in a 3D digital cadastre. *Geo-spatial Information Science, 24, 2*, 201-214, doi:https://doi.org/10.1080/10095020.2020.1780956.
15. Atazadeh, B., Olfat, H., Rajabifard, A., Kalantari, M., **Shojaei, D.** & Marjani, A.M. 2021. Linking Land Administration Domain Model and BIM environment for 3D digital cadastre in multi-storey buildings. *Land Use Policy, 104*, 105367, doi:https://doi.org/10.1016/j.landusepol.2021.105367.
16. Atazadeh, B., Halalkhor Mirkalaei, L., Olfat, H., Rajabifard, A. & **Shojaei, D.** 2021. Integration of cadastral survey data into building information models. *Geo-spatial Information Science, 24, 3*, 387-402, doi:https://doi.org/10.1080/10095020.2021.1937336.
17. Olfat, H., Atazadeh, B., Rajabifard, A., Mesbah, A., Badiee, F., Chen, Y., **Shojaei, D.** & Briffa, M. 2020. Moving Towards a Single Smart Cadastral Platform in Victoria, Australia. *ISPRS International Journal of Geo-Information, 9, 5*, 303, doi:https://doi.org/10.3390/ijgi9050303.
18. Nadi, S., **Shojaei, D.** & Ghiasi, Y. 2020. Accuracy Assessment of DEMs in Different Topographic Complexity Based on an Optimum Number of GCP Formulation and Error Propagation Analysis. *Journal of Surveying Engineering, 146, 1*, 04019019, doi:https://doi.org/10.1061/(ASCE)SU.1943-5428.0000296.
19. Olfat, H., Jani, A., **Shojaei, D.**, Darvill, A., Briffa, M., Rajabifard, A. & Badiee, F. 2019. Tackling the challenges of visualising digital cadastral plans: The Victorian cadastre experience. *Land Use Policy, 83*, 84-94, doi:https://doi.org/10.1016/j.landusepol.2019.01.037.
20. Olfat, H., Atazadeh, B., **Shojaei, D.** & Rajabifard, A. 2019. The Feasibility of a BIM-Driven Approach to Support Building Subdivision Workflows—Case Study of Victoria, Australia. *ISPRS International Journal of Geo-Information, 8, 11*, 499, doi:https://doi.org/10.3390/ijgi8110499.
21. 20. Atazadeh, B., Olfat, H., Rismanchi, B., **Shojaei, D.** & Rajabifard, A. 2019. Utilizing a Building Information Modelling Environment to Communicate the Legal Ownership of Internet of Things-Generated Data in Multi-Owned Buildings. *Electronics, 8, 11*, 1258, doi:https://doi.org/10.3390/electronics8111258.
22. **Shojaei, D.**, Olfat, H., Rajabifard, A. & Briffa, M. 2018. Design and Development of a 3D Digital Cadastre Visualization Prototype. *ISPRS International Journal of Geo-Information, 7, 10*, 384, doi:https://doi.org/10.3390/ijgi7100384.
23. Olfat, H., **Shojaei, D.**, Briffa, M., Maley, S. & Rajabifard, A. 2018. Strategic Actions for Increasing the Submission of Digital Cadastral Data by the Surveying Industry Based on Lessons Learned from Victoria, Australia. *ISPRS International Journal of Geo-Information, 7, 2*, 47, doi:https://doi.org/10.3390/ijgi7020047.
24. **Shojaei, D.**, Olfat, H., Quinones Faundez, S.I., Kalantari, M., Rajabifard, A. & Briffa, M. 2017. Geometrical data validation in 3D digital cadastre – A case study for Victoria, Australia. *Land Use Policy, 68*, 638-648, doi:https://doi.org/10.1016/j.landusepol.2017.08.031.
25. **Shojaei, D.**, Olfat, H., Rajabifard, A., Darvill, A. & Briffa, M. 2016. Assessment of the Australian digital cadastre protocol (ePlan) in terms of supporting 3D building subdivisions. *Land Use Policy, 56*, 112-124, doi:https://doi.org/10.1016/j.landusepol.2016.05.002.

26. **Shojaei, D.**, Rajabifard, A., Kalantari, M., Bishop, I.D. & Aien, A. 2015. Design and development of a web-based 3D cadastral visualisation prototype. *International Journal of Digital Earth, 8, 7*, 538-557, doi:https://doi.org/10.1080/17538947.2014.902512.
27. Aien, A., Rajabifard, A., Kalantari, M. & **Shojaei, D.** 2015. Integrating Legal and Physical Dimensions of Urban Environments. *ISPRS International Journal of Geo-Information, 4, 3*, 1442-1479, doi:https://doi.org/10.3390/ijgi4031442.
28. **Shojaei, D.**, Kalantari, M., Bishop, I.D., Rajabifard, A. & Aien, A. 2013. Visualization requirements for 3D cadastral systems. *Computers, Environment and Urban Systems, 41*, 39-54, doi:https://doi.org/10.1016/j.compenvurbsys.2013.04.003.

Peer-Reviewed Conference Papers

1. Meliana, I., Hajji, R. & **Shojaei, D.** 2024. Exploring Spatial Interaction and Visualization Paradigms for 3D Cadastral Visualization. *ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci., X-4/W5-2024*, 237-246, doi: https://doi.org/10.5194/isprs-annals-X-4-W5-2024-237-2024.
2. Zhang, Z., Khoshelham, K. & **Shojaei, D.** 2024. Pole-NN: Few-Shot Classification of Pole-Like Objects in Lidar Point Clouds. *ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci., X-4/W5-2024*, 333-340, doi: https://doi.org/10.5194/isprs-annals-X-4-W5-2024-333-2024.
3. Tanfield, K., Heywood, C., Warren-Myers, G., Kalantari, M. & **Shojaei, D.** 2023. ISO 19650.3 and the digitisation of operations in strata-titled residential apartment developments. *In Proceedings of the IOP Conference Series: Earth and Environmental Science,* 2023; p. 012020, doi:https://doi.org/10.1088/1755-1315/1176/1/012020.
4. Muthalif, M.Z.A., **Shojaei, D.** & Khoshelham, K. 2022. Resolving Perceptual Challenges of Visualizing Underground Utilities in Mixed Reality. *In Proceedings of the Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2022; pp. 101-108, doi:https://doi.org/10.5194/isprs-archives-XLVIII-4-W4-2022-101-2022.
5. Jafary, P., **Shojaei, D.**, Rajabifard, A. & Ngo, T. 2022. A Framework to Integrate BIM with Artificial Intelligence and Machine Learning-based Property Valuation Methods. *In Proceedings of the ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2022; pp. 129-136, doi:https://doi.org/10.5194/isprs-annals-X-4-W2-2022-129-2022.
6. Emamgholian, S., Pouliot, J., **Shojaei, D.** & Losier, L.M. 2022. A Web-Based Planning Permit Assessment Prototype: iTwin4PP. *In Proceedings of the Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2022; pp. 37-44, doi:https://doi.org/10.5194/isprs-archives-XLVIII-4-W4-2022-37-2022.
7. Emamgholian, S., Pouliot, J. & **Shojaei, D.** 2021. 3D Zoning: A Missing Piece to Link Planning Regulations with 3D Cadastre. *In Proceedings of the 7th International FIG Workshop on 3D Cadastres,* New York, United States, 2021, doi:https://doi.org/10.4233/uuid:ec641882-0040-456d-a101-f641aa5c70d9.
8. Emamgholian, S., Pouliot, J. & **Shojaei, D.** 2021. 3D CITYLUR: Modelling 3D City Land-Use Regulations to Support Issuing a Planning Permit. *In Proceedings of the ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2021; pp. 113-120, doi:https://doi.org/10.5194/isprs-annals-VIII-4-W2-2021-113-2021.
9. Emamgholian, S., Pouliot, J. & **Shojaei, D.** 2020. Modelling Land-Use Regulation Conflicts with 3D Components to Support Issuing a Building Permit. *In Proceedings of the Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2020; pp. 41-48, doi:https://doi.org/10.5194/isprs-archives-XLIV-4-W1-2020-41-2020.
10. **Shojaei, D.**, Olfat, H., Aien, A., Nimorakiotakis, N. & Rajabifard, A. 2019. Utilising Virtual and Augmented Reality Technologies to Improve the Visualisation of Digital Cadastre—The Victorian Cadastre Experience. *In Proceedings of the 3D Geoinfo 2019 Conference - 2nd International IAG Workshop on BIM and GIS integration,* Singapore, 24-27 September 2019, 2019.
11. Rajabifard, A., Atazadeh, B., Yip, K.M., Kalantari, M., Anaraki, M.R., Olfat, H., Badiee, F., **Shojaei, D.**, Lim, C.K. & Zain, M.A.M. 2019. Design and Implementation of a 3D National Digital Cadastral Database based on Land Administration Domain Model. *In Proceedings of the 8th Land Administration Domain Model Workshop (LADM2019),* Kuala Lumpur, Malaysia, 2019, doi:https://doi.org/10.4233/uuid:bf155fd1-ecb7-43d6-bc55-04cbf8c248c7.
12. **Shojaei, D.**, Olfat, H., Rajabifard, A., Kalantari, M. & Briffa, M. 2018. Moving Towards a Fully Operational 3D Digital Cadastre: Victoria, Australia. *In Proceedings of the 6th International FIG Workshop on 3D Cadastres,* Delft, Netherlands, 2018, doi:http://resolver.tudelft.nl/uuid:7582e08d-44e4-49b4-aaef-fea150cf56a5.
13. Rajabifard, A., Agunbiade, M., Kalantari, M., Yip, K.M., Atazadeh, B., Badiee, F., Isa, D.M.N.B., Adimin, M.K.B., Chan, K.L., Aien, A., Olfat, H., **Shojaei, D.** & Anaraki, M.R. 2018. An LADM-based Approach for Developing and Implementing a National 3D Cadastre – A Case Study of Malaysia. *In Proceedings of the 7th Land Administration Domain Model Workshop (LADM2018),* Zagreb, Croatia, 2018, doi:https://doi.org/10.4233/uuid:6a337aa8-38bc-4505-855e-fcea28377294.

14. Olfat, H., **Shojaei, D.**, Rajabifard, A. & Briffa, M. 2018. An overview of the Victorian 3D Digital Cadastre Roadmap. *In Proceedings of the International Symposium on A Smart Sustainable Future for All – Enhancing Resilience in a Changing Landscape,* The University of Melbourne, Australia, 24-26 September 2018, 2018, doi:https://rest.neptune-prod.its.unimelb.edu.au/server/api/core/bitstreams/194531ae-be28-5d01-ad0a-59256927140e/content.
15. **Shojaei, D.**, Olfat, H., Briffa, M. & Rajabifard, A. 2017. 3D Digital Cadastre Journey in Victoria, Australia. *In Proceedings of the ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2017; pp. 117-123, doi:https://doi.org/10.5194/isprs-annals-IV-4-W5-117-2017.
16. Olfat, H., **Shojaei, D.**, Briffa, M. & Rajabifard, A. 2017. The Current Status and Ongoing Investigations of 2D and 3D Digital Cadastre (ePlan) in Victoria, Australia. *In Proceedings of the 10th International Symposium on Digital Earth & Locate17,* Sydney, Australia, 3-6 April 2017, 2017, doi:http://ceur-ws.org/Vol-1913/RL17_paper_3.pdf.
17. Emamgholian, S., Taleai, M. & **Shojaei, D.** 2017. A Novel Approach for 3D Neighbourhood Analysis. *In Proceedings of the Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2017; pp. 361-365, doi:https://doi.org/10.5194/isprs-archives-XLII-2-W7-361-2017.
18. Aien, A., Rajabifard, A., Kalantari, M., Williamson, I. & **Shojaei, D.** 2017. Review and Assessment of Current Cadastral Data Models for 3D Cadastral Applications. *In Proceedings of the Advances in 3D Geoinformation,* Cham, 2017//, 2017; pp. 423-442, doi:https://doi.org/10.1007/978-3-319-25691-7_24.
19. Olfat, H., **Shojaei, D.** & Briffa, M. 2016. The Victorian Digital Cadastre: Challenges and Investigations. *In Proceedings of the 3rd Annual Conference of Research@Locate,* Melbourne, Australia, 2016; pp. 47-52, doi:http://ceur-ws.org/Vol-1570/paper05.pdf.
20. Rajabifard, A., Williamson, I., Marwick, B., Kalantari, M., Ho, S., **Shojaei, D.**, Atazadeh, B., Amirebrahimi, S. & Jamshidi, A. 2014. 3D-cadastre, a multifaceted challenge. *In Proceedings of the FIG Congress 2014–Engaging the Challenges, Enhancing the Relevance,* Kuala Lumpur, Malaysia, 16-21 June 2014 2014, doi:https://www.fig.net/resources/proceedings/2014/2014_3dcadastre/3Dcad_2014_02.pdf.pdf.
21. Aien, A., Rajabifard, A., Kalantari, M., Williamson, I. & **Shojaei, D.** 2014. Development of XML Schemas for Implementation of a 3D Cadastral Data Model. *In Proceedings of the 4th International FIG 3D Cadastre Workshop,* Dubai, United Arab Emirates, 2014, doi:http://resolver.tudelft.nl/uuid:956aff32-d9ea-4f60-a959-1a0ca6dbc476.
22. **Shojaei, D.**, Rajabifard, A., Kalantari, M., Bishop, I. & Aien, A. 2012. Development of a 3D ePlan/LandXML visualisation system in Australia. *In Proceedings of the 3rd International Workshop on 3D Cadastres: Developments and Practices,* Shenzhen, China 25-26 October 2012, 2012, doi:https://www.fig.net/resources/proceedings/2012/2012_3dcadastre/3Dcad_2012_46.pdf.
23. Aien, A., Kalantari, M., Rajabifard, A., Williamson, I.P. & **Shojaei, D.** 2012. Developing and Testing A 3D Cadastral Data Model A Case Study in Australia. *In Proceedings of the ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci.,* 2012; pp. 1-6, doi:https://doi.org/10.5194/isprsannals-I-4-1-2012.
24. Adili, E., Golestannejad, A., Heidarian, V., Amini, M., Sadeghi, M., **Shojaei, D.** & Rajabifard, A. 2010. Spatially Enabling Isfahan Metropolis through Local SDI. *In Proceedings of the GSDI 12 World Conference,* Singapore, 2010.
25. **Shojaei, D.** & Ataee, S. 2007. Using of Panorama Images in Developing of Tourism Industry. *In Proceedings of the ICT and Development of Tourism Industry Conference,* Isfahan, Iran, 2007.
26. **Shojaei, D.** 2006. Triangulation for surface modelling. *In Proceedings of the Ninth International Symposium on the 3-D Analysis of Human Movement,* Valenciennes, France, 2006, https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=f8f6af71287d891d882e03550aaf6282d903557b.
27. Hamrah, M., **Shojaei, D.** & Mosavi, A. 2006. Evaluation of DTM Generation in Surfer 8.0. *In Proceedings of the Map India 2006,* New Delhi, India, 2006, https://people.eng.unimelb.edu.au/shojaeid/Publications/Evaluation%20of%20DTM%20Generation%20in%20SURFER%208.0.pdf.
28. Varshosaz, M., Helali, H. & **Shojaei, D.** 2005. The Methods of Triangulation. *In Proceedings of the Map Middle East 2005, 1st Annual Middle East Conference and Exhibition on Geospatial Information, Technology and Applications,* Dubai, UAE, 2005, https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=29ffb66eafee0b6d1d6fcb9a96b59ea98262a1b7.
29. Varshosaz, M., Helali, H. & **Shojaei, D.** 2005. Evaluation the Methods of Triangulation and Effective Parameters. *In Proceedings of the Geomatics 84 Exhibition and Conference,* National Cartography Centre, Tehran, Iran, 2005.

30. **Shojaei, D.** 2005. Using GIS and Application for Tourism. *In Proceedings of the Map Middle East 2005, 1st Annual Middle East Conference and Exhibition on Geospatial Information, Technology and Applications,* Dubai, UAE, 2005, https://people.eng.unimelb.edu.au/shojaeid/Publications/Using%20GIS%20and%20Application%20for%20Tourism.pdf.

Book Chapters

1. Olfat, H. & **Shojaei, D.** 2019. Modernizing Land Administration Systems to Support Sustainable Development Goals - Case Study of Victoria, Australia. In *Sustainable Development Goals Connectivity Dilemma*, Rajabifard, A., Ed.; CRC Press: Boca Raton, pp. 325-336, doi:https://doi.org/10.1201/9780429290626.
2. Pouliot, J., Ellul, C., Hubert, F., Wang, C., Rajabifard, A., Kalantari, M., **Shojaei, D.**, Atazadeh, B., van Oosterom, P.J.M., de Vries, M.E. & Ying, S. 2018. Visualization and New Opportunities. In *Best Practices 3D Cadastres - Extended version*, Oosterom, P.v., Ed.; International Federation of Surveyors (FIG): Copenhagen, Denmark, pp. 183-230, doi:http://resolver.tudelft.nl/uuid:fd47c799-c03f-4018-9653-a1463ba93534.
3. **Shojaei, D.** 2012. 3D Visualisation as a Tool to Facilitate Managing Land and Properties. In *A National Infrastructure for Managing Land Information*, Rajabifard, A., Williamson, I., Kalantari, M., Eds.; The University of Melbourne pp. 88-94, https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=0b0fb91231ec10b56d6535ba6a44b36b08097ef3#page=89.

Magazine Articles

1. **Shojaei, D.**, Rajabifard, A., Kalantari, M. & Bishop, I. 2013. 3D Visualisation of Cadastres. *Traverse 292,* pp. 22-24.
2. **Shojaei, D.** & Rajabifard, A. 2013. Time to Visualise Cadastre in 3D. *Geospatial Today 6,* pp. 40-43.
3. Aien, A., Rajabifard, A., Kalantari, M., Williamson, I. & **Shojaei, D.** 2011. 3D Cadastre in Victoria, Converting Building Plans of Subdivision to LandXML. *GIM International 25, 8*, https://www.gim-international.com/content/article/3d-cadastre-in-victoria-australia.

RESEARCH GRANTS AND AWARDS

2024	Geospatial Excellence Award - Educational Development, Oceanic Winner, Geospatial Council of Australia
2023	The Faculty of Engineering and Information Technology (FEIT) Excellence Awards - Teaching and Learning for Early Career Academics, the University of Melbourne
2023	CIS-IE 2023 Seed Funding - Using Artificial Intelligence to detect and extract underground utilities from Ground Penetrating Radar (GPR) images, The University of Melbourne
2023	Sprint Research Grants - 5G mmWave Network Planning Tool, Telstra / The University of Melbourne
2023	Geospatial Excellence Award - Educational Development, Victorian Award, Geospatial Council of Australia
2023	ABP-FEIT Research Collaboration Development Grant, the University of Melbourne
2023	Sprint Research Grants - Detection and Capturing of Street Assets Using Artificial Intelligence, Telstra / The University of Melbourne
2023	Major Teaching and Learning Infrastructure Funding, the University of Melbourne
2022	ARC Discovery Project - A digital twin framework for human mobility measurement in the home setting, 2023-2025, the University of Melbourne
2022	Research Initiatives Fund (RIF) Collaborative Equipment Grant, The University of Melbourne
2022	Sprint Research Grants - Detection and Capturing of Street Pole Positions from Imagery using Artificial Intelligence, Telstra / The University of Melbourne
2022	FEIT Vising Academic Fellows (Outgoing), The University of Melbourne
2021	Special Recognition Award from the School of EMI, The University of Melbourne. This is in recognition of a team work in reimagining Geomatics education and developing new programs in Digital Infrastructure Engineering
2021	Dyason Fellowships - The integration of 3D cadastre and planning approval processes to facilitate urban development, The University of Melbourne
2021	Early Career Researcher Grant Scheme - Mobile Crowdsourcing for High-Quality Base Maps, The University of Melbourne
2021	Major Teaching and Learning Infrastructure Funding, The University of Melbourne

2021	Lux Modus Outstanding Paper in 3D Modelling, City 3D CITYLUR: Modelling 3D Land-Use Regulations to Support Issuing a Planning Permit, 3DGeoInfo 2021, New York, USA
2021	Dual-delivery Contribution Grant for GEOM20015, The University of Melbourne
2021	Co-Supervisor, Mitacs - Land-use regulation modelling and conflicts detection in 3D city models: A proof of concept based on Bentley software solutions (3D CityLuR), Laval University
2021	Lead CI, Research grant, 5G mmWave network planning and customer service qualification using ray-tracing, Telstra
2021	Lead CI, ePlanning and eApprovals Project, CRC Building 4.0
2020	Departmental Award, for outstanding work in teaching and research, Department of Infrastructure Engineering
2019	MSE Strategic Investment Fund, The University of Melbourne
2019	Travel Grant to Attend the World Urban Forum in Abu Dhabi
2018	MSE Strategic Investment Fund, The University of Melbourne
2013	Elected Student Member, The Institution of Surveyors Victoria, Australia
2012	Award for best paper presentation, Post Graduate Conference, The University of Melbourne
2010	Melbourne International Research Scholarship (MIRS)
2010	Melbourne International Fee Remission Scholarship (MIFRS)
2009	Two full PhD Scholarships from the European Commission (Erasmus Mundus Scholarship)

PROJECTS

2022 - 2023	Detection and Capturing of Street Assets using Artificial Intelligence
2022 - 2023	Detection and Capturing of Street Pole Positions from Imagery using Artificial Intelligence
2022 - 2023	Mobile Crowdsourcing for High-Quality Base Maps
2021	ePlanning and eApprovals Project, CRC Building 4.0
2019 - 2020	Technical Team Member of Fishermans Bend Digital Twin for DELWP
2017 - 2018	Technical Team Member of a 3D Cadastre research project with the Department of Survey and Mapping in Malaysia
2017 - 2019	Technical Team Member of an ARC Linkage project on 3D Property Ownership Map Base for Smart Urban Land Administration
2014 - 2015	Technical Team Member of developing an application for 3D City Modelling of Tehran City
2011 - 2012	Technical Team Member of Proposing a Street Coding Approach for Tehran City
2010 - 2014	Technical Team Member of an ARC Linkage project on Land and Property Information in 3D
2007 - 2010	Project Manager of Monitoring of Development of Green Areas in Isfahan Mobarakeh Steel Company
2007 - 2008	Consultant of Modernising GIS Division in Isfahan Province Industrial Estates Co, Isfahan, Iran
2006	Manager of a GIS Project for Isfahan Regional Water Company, Isfahan, Iran
2006	Manager of a Road Surveying Project, Isfahan, Iran
2006	Manager of a Surveying/Cadastral Project, Isfahan (Shahreza), Iran
2006	Manager of a Surveying project to create 1:500 Cadastral Map, Dezfool, Iran
2005	Manager of a GIS Project for Hassan Khan Cadastre, Tehran, Iran
2005	Technical Team Member of GIS Needs Analysis and Conceptual Database Design Project for Khuzestan Power Industry, Iran
2005	Technical Team Member: GIS Needs Analysis and Conceptual Database Design Project for East Azerbaijan Regional Water Corp., Iran
2004	Manager of a Surveying Project for Tehran Metro – Line 4 in Tehran, Iran
2004	Manager of a Surveying Project in Booshehr, Iran
2004	Manager of a Surveying Project in Tehran, Iran
2004	Technical Team Member of a Road Surveying Project, Damavand, Iran
2003	Digital Cartographer: Private Sector

RESEARCH SUPERVISION

2023	PhD Student - Real-Time Centimetre-Grade 2D Floor Plan Generation from Mobile Laser Scanners - Mojtaba Akhoundi Khezrabad
2023	PhD Student - Utilization of Building Information Modeling to Streamline the Process of Building Permit Systems in Line with the Parametric Design Principles - Nikoo (Fatemeh) Mirhosseini
2022	Masters Students - 5G mmWave Network Planning and Customer Service Qualification in Urban and Suburban areas - Bencheng Fan, Elizabeth Kurisinkal Robin, Minh An Dao
2022	PhD Student - Automatic Electrical Pole Capturing Using Machine Learning - Cipher (Zezheng) Zhang
2022	PhD Student - Application of Building Information Modelling (BIM) in property valuation - Peyman Jafary
2021	PhD Student - Improving Land Administration Reform by Aligning Incentive Systems - Tony Burns
2021	Masters Student - Automatic Object Detection with Artificial Intelligence - Cipher (Zezheng) Zhang

2021	Masters Students - Capturing, Modelling and Visualisation of RRRs in Underground 3D Cadastre - A Case Study in Victoria - Patrice Moloney, Sukruta Matta, Giulia Zanotto
2021	Masters Students - 5G mmWave Network Planning and Customer Service Qualification in Urban and Suburban Areas - Huixuan Chen, Zhuangzhuang Ma, Shiming Fan, Yingying Gong
2021	PhD Student - The Digitisation of Repairs and Maintenance in Residential High-rise Apartments - Karen Tanfield
2020	PhD Student - Augmented Reality Visualization of Subsurface Utilities - Mohamed Zahlan Abdul Muthalif
2020	Masters Student - Application Of 3D Cadastre And 3D Urban Analytics in Digital Twin - Hazel Altundal
2020	Masters Student - Application Of 3D Cadastre And 3D Urban Analytics in Digital Twin - Ivan Widjaja
2020	Masters Student - Developing a Method to Extract Exterior Components of BIM Files to Enhance 3D Visualization on the Web - Su Chen
2020	Masters Student - Requirement engineering for development of a 3D platform to visualise major infrastructures - Shrikrishna Sanjay Dere
2019 - 2022	PhD Student - Spatio-temporal Conflicts in Building Regulations - Saied Emamgholian, (Laval University)
2017	Masters Student - 3D Neighbourhood Analysis for 3D Cadastre - Saied Emamgholian (KNT University of Technology, Iran)
2017	Bachelor Student - Data Modelling of 3D Legal Objects: How to capture and define 3D boundaries - Roy Posi (RMIT University)
2016	Masters Student - 3D Data Validation for 3D cadastre - Sebastian Ignacio Quinones Faundez (The University of Melbourne)

PROFESSIONAL MEMBERSHIPS

- Surveying and Spatial Sciences Institute (SSSI), Australia
- The Institution of Surveyors Victoria (ISV), Australia

RESEARCH COLLABORATION

- Telstra
- Building 4.0 CRC
- Laval University

EDITORIAL BOARD

- Journal of Frontiers in Built Environment (Building Information Modelling (BIM))
- Journal of Frontiers in Environmental Science
- Journal of Civil Engineering Researchers

PEER REVIEWER/REFEREE FOR

- Australian Research Councils for Linkage and Discovery Projects
- International Journal of Geographical Information Science (IJGIS)
- Land Use Policy Journal (LUP)
- Journal of Spatial Science
- Journal of Transactions in GIS
- Journal of Computers, Environment and Urban Systems
- International Journal of Digital Earth
- International Journal of Geo-Information

GUEST EDITOR

- Special issue on Digital Twins and Land Administration Systems in ISPRS International Journal of Geo-Information (IJGI)

SEMINARS AND CONFERENCES

- May 2023: Application of Digital Twin for Urban Planning and Land Administration at Locate 2023, Adelaide (Workshop)
- May 2023: Mobile crowdsourcing for high quality base maps at Locate 2023, Adelaide Selected for oral presentation)
- Oct 2022: Digital Twin in Construction Approvals in the Workshop on Enabling Digital Twins, 7th Smart Data Smart Cities & 17th 3D GeoInfo, Sydney (Invited to talk)
- Sep 2022: Digital Twin Concept and its Application in Urban Management - Quebec (Invited to talk)
- Jul 2022: Presentation in ISV - Course Update for 2023 - the University of Melbourne (Invited to talk)

- March 2021: “Education in Surveying” at a seminar organised by CSV (Invited to talk)
- Feb 2020: Oracle Construction Technology Summit - Melbourne (Invited to talk)
- Feb 2020: YP Webinar: Fisherman’s Bend Digital Twin - Melbourne (Invited to talk)
- Nov 2019: BIM and Modern Urban Land Administration Training Program (I ran this training seminar at the University of Melbourne)
- Sep 2019: Presented a paper in 3D GeoInfo Conference 2019 - Singapore (Selected for oral presentation)
- Feb 2019: 3D Land and Property in Modern Land Administration & 3D Digital Cadastre Seminar at the University of Melbourne (Invited to talk)
- Sep 2018: International Symposium on A Smart Sustainable Future for All - the University of Melbourne (Selected for oral presentation)
- Feb 2018: Presented at MELBIM at RMIT University - Melbourne (Invited to talk)
- Sep 2017: Presented a paper in 3D GeoInfo Conference 2017 - Melbourne (Selected for oral presentation)
- Apr 2016: Locate 16 - Melbourne (Selected for oral presentation)
- Sep 2012: 3rd International Workshop on 3D Cadastres: Developments and Practices - Shenzhen (Selected for oral presentation)

SCIENTISTS ASSOCIATIONS

- Since 2011 - Member of a 3D Cadastres working group run by the International Federation of Surveyors (FIG)