

- Badan Standarisasi Nasional. (2002). *Standar Nasional Indonesia Jaring kontrol horizontal*.
- Basuki, S. (2011). *Ilmu ukur tanah*. Gadjah Mada University Press.
- Batara, D. Y. (2012). Pembuatan Model Tiga Dimensi (3D) Sistem Informasi Geografis (SIG) untuk Visualisasi Wilayah Kota. *Jurnal Poros Teknik*, 4(1), 14–18.
- Berners-Lee, T. (1999). *Weaving the Web: The original design and ultimate destiny of the World Wide Web by its inventor*. <https://dl.acm.org/doi/abs/10.5555/580812>
- Bertin, J. (1983). *Semiology of Graphics: Diagrams, Networks, Maps*. ESRI Press.
- Besl, P. J., & McKay, N. D. (1992). A Method for Registration of 3-D Shapes. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 14(2), 239–256. <https://doi.org/10.1109/34.121791>
- Biljecki, F. (2013). The concept of level of detail in 3D city models. In *PhD Research Proposal, Delft University of Technology: Vol. II* (Issue 62). <http://repository.tudelft.nl/assets/uuid:cea5a207-e796-4691-9440-13362cf8654c/291180.pdf>
- Biljecki, F. (2017). Level of detail in 3D city models [TU Delft University]. In *TU Delft University*. <https://doi.org/https://doi.org/10.4233/uuid:f12931b7-5113-47ef-bfd4-688aae3be248>
- Böhler, W., & Marbs, A. (2003). Investigating Laser Scanner Accuracy. *A Technical Report for Institute for Spatial Information and Surveying Technology*, 34, 6969–701.
- Boton, C. (2018). Supporting constructability analysis meetings with Immersive Virtual Reality-based collaborative BIM 4D simulation. *Automation in Construction*, 96, 1–15. <https://doi.org/10.1016/j.autcon.2018.08.020>
- Brey, P., & Søraker, J. H. (2009). Philosophy of Computing and Information Technology. In *Philosophy of Technology and Engineering Sciences* (Vol. 9). Elsevier B.V. <https://doi.org/10.1016/B978-0-444-51667-1.50051-3>
- Brooke, J. (1996). SUS: A “Quick and Dirty” Usability Scale. In *Usability Evaluation In Industry* (pp. 207–212). CRC Press. <https://doi.org/10.1201/9781498710411-35>
- Brumana, R., Banfi, F., Cantini, L., Previtali, M., & Della Torre, S. (2019). Hbim level of detail-geometry-Accuracy and survey analysis for architectural preservation. *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information*

- Carpendale. (2003). Considering Visual Variables as a basis for Information Visualisation. *Cartographica: International Journal for Geographic Information and Geovisualization*, 43, 175–188. <https://doi.org/http://dx.doi.org/10.11575/PRISM/30495>
- Chang, K.-H. (2015). Solid Modeling. In *e-Design*. Academic Press. <https://doi.org/10.1016/b978-0-12-382038-9.00003-x>
- Dag, A., & Ozdemir, A. C. (2013). A Comparative Study for 3D Surface Modeling of Coal Deposit by Spatial Interpolation Approaches. *Resource Geology*, 63(4), 394–403. <https://doi.org/10.1111/rge.12018>
- Dibs, H., & Al-Ansari, N. (2023). Integrating Highly Spatial Satellite Image for 3D Buildings Modelling Using Geospatial Algorithms and Architecture Environment. *Engineering*, 15(04), 220–233. <https://doi.org/10.4236/eng.2023.154017>
- Fernández-Mora, V., Navarro, I., & Yepes, V. (2022). Integration of the structural project into the BIM paradigm: A literature review. *Journal of Building Engineering*, 53, 104318. <https://doi.org/10.1016/j.jobbe.2022.104318>
- Gani, L., & Achmad, A. (2019). Website dan HTML. In *Website dan HTML* (p. 58). <https://www.pustaka.ut.ac.id/lib/wp-content/uploads/pdfmk/MSIM4309-M1.pdf>
- Godinho, M., Machete, R., Ponte, M., Falcão, A. P., Gonçalves, A. B., & Bento, R. (2020). BIM as a resource in heritage management: An application for the National Palace of Sintra, Portugal. *Journal of Cultural Heritage*, 43, 153–162. <https://doi.org/10.1016/J.CULHER.2019.11.010>
- Haerani, N., Abidin, H., Gumilar, I., Sadarviana, V., & Wijaya, D. (2016). On the Performance of Terrestrial Laser Scanner for Volcanic and Landslide Hazard Assessment in Indonesia. *FIG Working Week 2016*, 54(May). [https://www.researchgate.net/profile/Hasanuddin-Z-Abidin/publication/304523856\\_On\\_the\\_Performance\\_of\\_TLS\\_for\\_Volcanic\\_and\\_Landslide\\_Hazard\\_Assessment\\_in\\_Indonesia/links/5772269408ae842225ac3389/On-the-Performance-of-TLS-for-Volcanic-and-Landslide-Hazard-A](https://www.researchgate.net/profile/Hasanuddin-Z-Abidin/publication/304523856_On_the_Performance_of_TLS_for_Volcanic_and_Landslide_Hazard_Assessment_in_Indonesia/links/5772269408ae842225ac3389/On-the-Performance-of-TLS-for-Volcanic-and-Landslide-Hazard-A)
- Halik, Ł. (2018). The analysis of visual variables for use in the cartographic design of point symbols for mobile Augmented Reality applications. *Geodesy and Cartography*, 61(1), 19–30. <https://doi.org/10.2478/v10277-012-0019-4>
- Hebert, M., & Krotkov, E. (1992). 3D measurements from imaging laser radars: how

- Inojosa, L., & de Araújo Vilanova, K. (2023). BIM interoperability in the maintenance planning process for existing buildings. *Journal of Building Pathology and Rehabilitation*, 8, 45. <https://doi.org/10.1007/s41024-023-00292-4>
- ISO. (2018). Ergonomics of human-system interaction - Part 11: Usability: Definitions and Concepts. In *Iso 9241-11:2018* (Issue November). <https://www.iso.org/standard/63500.html>
- Jacobs, G. (2005). High Definition Surveying : 3D Laser Scanning Use in Building and Architectural. *Professional Surveyor Magazine*.
- Janßen, J., Kuhlmann, H., & Holst, C. (2024). Keypoint-based registration of TLS point clouds using a statistical matching approach. *Journal of Applied Geodesy*, 18(2), 267–284. <https://doi.org/10.1515/jag-2022-0058>
- Jarżabek-Rychard, M., & Maas, H. G. (2023). Modeling of 3D geometry uncertainty in Scan-to-BIM automatic indoor reconstruction. *Automation in Construction*, 154, 105002. <https://doi.org/10.1016/J.AUTCON.2023.105002>
- Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, 7(4), 396–403. <https://doi.org/10.9734/bjast/2015/14975>
- Kallio, T., & Kaikkonen, A. (2005). Handbook of research on user interface design and evaluation for mobile technology. *Journal of Usability Studies*, 1(12), 4–16. <https://doi.org/10.5860/choice.45-6836>
- Karas, P. J., Gopakumar, S., Lazaro, T. T., Lee, S., Khan, A. B., Hadley, C. C., & Patel, A. J. (2022). 3-Dimensional Modeling in Virtual Reality for Resection of a Pineal Region Falcotentorial Meningioma. *World Neurosurgery*, 161, 110. <https://doi.org/10.1016/J.WNEU.2022.02.058>
- Kęsik, J., Milosz, M., Montusiewicz, J., & Samarov, K. (2021). Documenting the geometry of large architectural monuments using 3D scanning – the case of the dome of the Golden Mosque of the Tillya-Kori Madrasah in Samarkand. *Digital Applications in Archaeology and Cultural Heritage*, 22(May). <https://doi.org/10.1016/j.daach.2021.e00199>
- Laksono, D. (2019). *No Title*. [https://map.openaerialmap.org/#/110.372254550457,-7.764229796697415,18/user/5e328cd24469a3000531a768?\\_k=6cdory](https://map.openaerialmap.org/#/110.372254550457,-7.764229796697415,18/user/5e328cd24469a3000531a768?_k=6cdory)
- Laksono, D., & Aditya, T. (2019). Utilizing a game engine for interactive 3D topographic

<https://doi.org/10.3390/ijgi8080361>

Langer, D., Mettenleiter, M., Härtl, F., & Fröhlich, C. (2000). Imaging lidar for 3-D surveying and CAD modeling of real-world environments. *International Journal of Robotics Research*, 19(11), 1075–1088.  
<https://doi.org/10.1177/02783640022067986>

LaValle, S. M. (2023). *Virtual Reality*. Cambridge University Press. <https://doi.org/DOI:10.1017/9781108182874>

Li, B., Wei, X., Liu, B., Wang, W., He, Z. F., & Lai, Y. K. (2024). 3D colored object reconstruction from a single view image through diffusion. *Expert Systems with Applications*, 252, 124225. <https://doi.org/10.1016/J.ESWA.2024.124225>

Lichti, D. D., Gordon, S. J., & Tipdecho, T. (2004). Error Models and Propagation in Directly Georeferenced Terrestrial Laser Scanner Networks. *Journal of Surveying Engineering*, 131(4), 135–142. [https://doi.org/https://doi.org/10.1061/\(ASCE\)0733-9453\(2005\)131:4\(135\)](https://doi.org/https://doi.org/10.1061/(ASCE)0733-9453(2005)131:4(135))

Lyu, B., & Wang, Y. (2024). Immersive visualization of 3D subsurface ground model developed from sparse boreholes using virtual reality (VR). *Underground Space*, 17, 188–206. <https://doi.org/10.1016/J.UNDSP.2023.11.004>

Ma, Z., & Ren, Y. (2017). Integrated Application of BIM and GIS: An Overview. *Procedia Engineering*, 196, 1072–1079.  
<https://doi.org/10.1016/j.proeng.2017.08.064>

Matsuda, K., & Lea, R. (2013). *WebGL Programming Guide: Interactive 3D Graphics Programming with WebGL*.

Neuville, R., Pouliot, J., Poux, F., de Rudder, L., & Billen, R. (2018). A Formalized 3D Geovisualization Illustrated to Selectivity Purpose of Virtual 3D City Model. *ISPRS International Journal of Geo-Information* 2018, Vol. 7, Page 194, 7(5), 194.  
<https://doi.org/10.3390/IJGI7050194>

Nielsen, J. (1993). *Usability Engginering*. 195–200.

Norman, D. (2013). *The Design of Everyday Things: Revised and Expanded Edition*. Basic Books.

Open Geospatial Consortium. (2008). OpenGIS City Geography Markup Language (CityGML) Encoding Standard. In *Open Geospatial Consortium August 2008* (Issues 08-007r1). <http://www.opengis.net/spec/citygml/2.0>

Osadcha, I., Jurelionis, A., & Fokaides, P. (2023). Geometric parameter updating in

- digital twin of built assets: A systematic literature review. *Journal of Building Engineering*, 73(March), 106704. <https://doi.org/10.1016/j.jobbe.2023.106704>
- Parseno, & Yulaikhah. (2010). Pengaruh Sudut Vertikal Terhadap Hasil Ukuran Jarak dan Beda Tinggi Metode Trigonometris Menggunakan Total Station Nikon DTM 352. *Forum Teknik*, 3(3), 149–156. <https://jurnal.ugm.ac.id/mft/article/view/645>
- Pavelka, K., & Michalík, B. (2019). Laser scanning for bim and results visualization using VR. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives*, 42(5/W2), 49–52. <https://doi.org/10.5194/isprs-archives-XLII-5-W2-49-2019>
- Pesci, A., Bonali, E., Galli, C., & Boschi, E. (2012). Laser scanning and digital imaging for the investigation of an ancient building: Palazzo d'Accursio study case (Bologna, Italy). *Journal of Cultural Heritage*, 13(2), 215–220. <https://doi.org/10.1016/J.CULHER.2011.09.004>
- Pfeifer, N., Dorninger, P., Haring, A., & Fan, H. (2007). Investigating terrestrial laser scanning intensity data: Quality and functional relations. *8th Conference on Optical 3-D Measurement Techniques, November*, 328–337.
- Prasidya, A. S., & Riyadi, G. (2018). Kajian Ketelitian Pengukuran Kerangka Kontrol Vertikal Menggunakan *Total Station* Akurasi Sudut 1” Dan 5” . *Jurnal Geodesi Dan Geomatika*, 01(02), 71–78.
- Purwohardjo, & Umaryono, U. (1986). Ilmu Ukur Tanah Seri B. In *Institut Teknologi Bandung*. Bandung: Jurusan Teknik Geodesi, FTSP-ITB, 1986.
- Quintero, M. S., Genechten, B. Van, Bruyne, M. De, Poelman, R., Hankar, M., Barnes, S., Caner, H., Budei, L., Heine, E., Reiner, H., García, J. L. L., & Taronger, J. M. B. (2008). Theory and Practice on Terrestrial Laser Scanning Training Material Based on Practical Applications Prepared by the Learning Tools for Advanced Three-dimensional Surveying in Risk Awareness Project (3DRiskMapping). In *Learning tools for advanced three-dimensional surveying in risk awareness project* (4th ed., Issue June, pp. 1–241).
- Reshetyuk, Y. (2009). Self-calibration and direct georeferencing in terrestrial laser scanning [Royal Institute of Technology (KTH)]. In *Department of Transport and Economics Division of Geodesy* (Issue January). <http://kth.diva-portal.org/smash/get/diva2:139761/FULLTEXT01.pdf>
- Salvi, J., Matabosch, C., Fofi, D., & Forest, J. (2007). A review of recent range image registration methods with accuracy evaluation. *Image and Vision Computing*, 25(5),

- Schmitz, B., Kuhlmann, H., & Holst, C. (2020). Investigating the resolution capability of terrestrial laser scanners and its impact on the effective number of measurements. *ISPRS Journal of Photogrammetry and Remote Sensing*, 159(July 2019), 41–52. <https://doi.org/10.1016/j.isprsjprs.2019.11.002>
- Sherman, W. R., & Craig, A. B. (2003). Understanding Virtual Reality: Interface, Application, and Design. *Understanding Virtual Reality: Interface, Application, and Design*, 1–580. <https://doi.org/10.1162/105474603322391668>
- Skrzypczak, I., Oleniacz, G., Leśniak, A., Zima, K., Mrówczyńska, M., & Kazak, J. K. (2022). Scan-to-BIM method in construction: assessment of the 3D buildings model accuracy in terms inventory measurements. *Building Research and Information*, 50(8), 859–880. <https://doi.org/10.1080/09613218.2021.2011703>
- Soudarissanane, S., Lindenbergh, R., & Gorte, B. (2008). Reducing the error in terrestrial laser scanning by optimizing the measurement set-up. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, XXXVII(B5), 615–620.
- Tavares, G. (2012). *WebGL Fundamentals*. Google Project. <https://webglfundamentals.org/webgl/lessons/webgl-fundamentals.html>
- Topcon. (2014). *Instruction Manual GLS-2000 Series*.
- Tyner, J. A. (2010). *Principles of Map Design*. <https://www.guilford.com/books/Principles-of-Map-Design/Judith-Tyner/9781462517121>
- USIBD. (2016). *Level of accuracy (LOA) specification for building documentation 2.0*. <https://www.usibd.org/>
- Van Goor, B. (2011). *Change detection and deformation analysis using Terrestrial Laser Scanning Case study of the metro tunnel at Rotterdam central station*. Delft University of Tehcnology.
- Vidyan, Y., Abidin, H. Z., Gumilar, I., & Haerani, dan N. (2013). *Pemanfaatan metode TLS ( Terrestrial Laser Scanning ) untuk pemantauan deformasi gunung api . Studi kasus : kerucut sinder Pemanfaatan metode TLS ( Terrestrial Laser Scanning ) untuk pemantauan deformasi gunung api . Studi kasus : kerucut sinder Gunung Ga. April*.
- Villani, V., Sabattini, L., Żołnierczyk-Zreda, D., Mockało, Z., Barańska, P., & Fantuzzi, C. (2021). Worker satisfaction with adaptive automation and working conditions: a theoretical model and questionnaire as an assessment tool. *International Journal of*



Wang, C. M., & Huang, C. H. (2015). A study of usability principles and interface design for mobile e-books. *Ergonomics*, 58(8), 1253–1265.

<https://doi.org/10.1080/00140139.2015.1013577>

Yeh, C. J. (2010). *The Principles of Interaction Design in the Post-digital Age*.

Yuan, S., Chan, H. C. S., & Hu, Z. (2017). Implementing WebGL and HTML5 in Macromolecular Visualization and Modern Computer-Aided Drug Design. In *Trends in Biotechnology* (Vol. 35, Issue 6, pp. 559–571). Elsevier Ltd.  
<https://doi.org/10.1016/j.tibtech.2017.03.009>