

DAFTAR PUSTAKA

- [1] M. Wati, "Simulation Of Surface Flow With Flow Rate Parameters Using Bernoulli Equation," *TESIS : Universitas Hasanuddin*, 2012.
- [2] B. B. Arianto, "Studi Penentuan Jalur Aliran Lava Metode Steepest Slope Dari Data DEM InSAR dan Peta Rupa Bumi Indonesia," *Skripsi: Institut Teknologi Sepuluh Nopember*, 2016.
- [3] A. Nurcahyo, "Zonasi Indeks Stabilitas Lereng Dengan Software SINMAP I," *Skripsi: Universitas Jember*, 2011.
- [4] S. I. L. Prasojo, "Perkiraan Lokasi Wilayah SUB DAS Pemicu Banjir di DAS Sampean Menggunakan Arcgis dan HEC-HMS," *Skripsi: Universitas Jember*, 2015.
- [5] W. M. H. b. W. Ab Karim and M. G. Hashim, "New D16 Algorithm for Surface Water Flow Direction," *Jurnal Teknologi UTM*, 2014.
- [6] "ArcMap," Esri, 2020. [Online]. Available: <https://desktop.arcgis.com/en/arcmap/latest/tools/spatial-analyst-toolbox/flow-direction.htm>. [Accessed 24 Oktober 2021].
- [7] Lapak GIS, "Membuat Peta Pola Arah Aliran Permukaan dengan Data DEM," Lapak GIS, 2020. [Online]. Available: <https://www.lapakgis.com/2020/11/membuat-peta-pola-arahan-permukaan.html>. [Accessed 2021 Oktober 2021].
- [8] J. P. Wilson, Terrain Analysis Tools for Routing Flow and Calculating Upslope Contributing Areas, Terrain Analysis for Water Resources Applications Symposium, 2002.
- [9] B. Miller, Comparison of Surface Hydrologic Algorithms in GIS, Michigan State University, 2010.

- [10] D. G. Tarboton, A New Method for the Determination of Flow Directions and Upslope Areas in Grid Digital Elevation Models, Water Resources Research American Geophysical Union, 1997.
- [11] W. Fathoni and S. Novianto, "Analisa Aliran Fluida (Fully Developed Flow) Pada Pipa Circular Dengan Menggunakan CFD Fluent," *Flywheel: Jurnal Teknik Mesin Untirta*, vol. IV, pp. 43 - 49, 2018.
- [12] V. L. Streeter, E. B. Wylie and A. Priyono, Mekanika Fluida (edisi delapan) Jilid 1, Jakarta: Erlangga, 1988.
- [13] W. Fathoni and S. Novianto, "Analisa Aliran Fluida (Fully Developed Flow) Pada Pipa Circular Dengan Menggunakan CFD Fluent," *Flywheel: Jurnal Teknik Mesin Untirta*, vol. IV, pp. 43 - 49, 2018.
- [14] Balai Pusdatura PC, "Hidrologi," Balai Pusdatura PC, 15 Juli 2017. [Online]. Available: <https://bpusdataru-pc.jatengprov.go.id/hidrologi/>. [Accessed 13 September 2021].
- [15] C. Asdak, Hidrologi dan Pengelolaan Daerah Aliran Sungai, Yogyakarta: Gadjah Mada University Press, 2002.
- [16] S. Aronoff, Geographic Information System a Management Perspective, Ottawa-Canada: WDL Publication, 1989.
- [17] B. Trisakti, Pengembangan Metode Ekstraksi DEM (Digital Elevation Model) dari Data ALOS PRISM, LAPAN, 2010.
- [18] Universitas Pakuan, Sistem Informasi Geografis, Bogor: Repository Unpak, 2020.
- [19] A. Anugerah, I. F. Astuti and A. H. Kridalaksana, "Sistem Informasi Geografis Berbasis Web Pemetaan Lokasi Toko Oleh-Oleh Khas Samarinda," *Jurnal Informatika Mulawarman*, vol. XI, pp. 43-47, 2016.
- [20] Badan Perencanaan Pembangunan Daerah, Tutorial Arcgis 10 Tingkat Dasar, Mataram: Bappeda Provinsi NTB, 2013.

- [21] Doktafia, Sistem Informasi Geografis (SIG), Jakarta, Gunadarma.
- [22] E. Prahasta, Sistem informasi geografis : Konsep-konsep dasar (Perspektif Geodesi & Geomatika), Bandung: Informatika, 2009.
- [23] Eguchi, R.T., dkk., "The Application of Remote Sensing Technologies for Disaster Management," *The 14th World Conference on Earthquake Engineering*, 2008.
- [24] D. Martinoni and L. Bernhard, A Conceptual Framework for Reliable Digital Terrain Modelling, Swiss: Department of Geography University of Zurich, 1998.
- [25] M. A. Suryawan and E. M. Hasiri, "Penerapan Algoritma Multiple Flow Direction Untuk Pemodelan Genangan Banjir," *Seminar Nasional APTIKOM*, 2017.
- [26] J. Wanga, H. Gonzalez-Jorgeb, R. Lindenbergha, P. Arias-S´anchezb and M. Menentia, "Geometric Road Runoff Estimation From Laser Mobile Mapping Data," *ISPRS Technical Commission V Symposium*, 2014.
- [27] U. Kalsum, " Penggunaan Pohon Keputusan (Decision tree) untuk Pengambilan keputusan dalam Penerimaan pegawai," *TUGAS AKHIR*, 2009.
- [28] Suyanto, Artificial Intelligence (Searching, Reasoning, Planning and Learning), Bandung: Informatika Bandung, 2007.
- [29] K. B. B. I. Online, "Kamus Besar Bahasa Indonesia," Badan Pengembangan dan Pembinaan Bahasa (Pusat Bahasa), [Online]. Available: <https://kbbi.web.id/koherensi>. [Accessed 25 Januari 2022].
- [30] R. Muhammad Imran, A. Rehman, M. M. Khan, M. R. Jamil, U. Abbas, R. S. Mahmood, S. A. Mahmood and R. M. Ehsan, "Delineation of Drainage Network and Estimation of Total Discharge using Digital Elevation Model (DEM)," *International Journal of Innovations in Science and Technology*, 2019.

- [31] K. Hansen, K. Hasenstab and A. Schwartzman, "Estimating Mountain Glacier Flowlines by Local Linear Regression Gradient Descent," *IEEE*, 2020.
- [32] D. Perdana and J. A. Nurhamidah, "Kolam Retensi Sebagai Upaya Mitigasi Banjir Berbasis Konservasi Daerah Aliran Sungai Batang Air Dingin," *Ace Conference*.
- [33] N. Nurhamidah, R. Rusman and B. Istijono, "A Raster-based model for flood inundation mapping on delta lowland," *MATEC Web of Conferences*, 2018.
- [34] Wang, Gonzalez-Jorgeb, A.-S. Lindenbergha and Menentia, "Geometric Road Runoff Estimation From Laser Mobile Mapping Data".
- [35] J. Seibert and B. L. McGlynn, "A new triangular multiple flow direction algorithm for computing upslope areas from gridded digital," *Water Resource Research*, 2007.
- [36] Z. Y. T. Li, C.-Y. Xu, P. Shi, B. Young, C.-s. Huang and C. Wang, "Evaluating the area and position accuracy of surface water paths obtained by flow direction algorithm," *Elsevier : Journal of Hydrology*, 2020.
- [37] L. Jiang, X.-D. Song, G. Tang and K. Liu, "Parallel contributing area calculation with granularity control on massive grid terrain dataset," *Elsevier : Computers & Geosciences*, 2013.
- [38] S. Schiele, H. Blaar, M. Muller-Hanneman, D. Thurkow and M. Moller, "Parallelization Strategies to Speed-Up Computations for Terrain Analysis on Multi-Core Processors," *IEEE*, 2012.
- [39] A. A. Villaverde, F. Jimenez-Hornero and E. G. d. Rave, "Influence of DEM resolution on drainage network extraction: A multifractal analysis," *Elsevier: Jurnal Geomorphology*, 2015.
- [40] Ina-Geoportal, "Seamless Digital Elevation Model (DEM) dan Batimetri Nasional," Badan Informasi Geospasial, 2018. [Online]. Available: <https://tanahair.indonesia.go.id/demnas/>.

- [41] B. Hell and M. Jakobsson, "Gridding heterogeneous bathymetric data sets with stacked continuous curvature splines in tension," *Marine Geophysical Research*, p. 493–501, 2011.
- [42] Indarto, S. Wahyuningsih, F. Usman and L. Rohman, "Pembuatan Jaringan Sungai Dan Karakteristik Topografi DAS Dari DEN-Jatim," *MEDIA TEKNIK SIPIL*, 2008.
- [43] T. Danielson, "Utilizing a High-Resolution Digital Elevation Model (DEM) to Develop a Stream Power Index (SPI) for the Gilmore Creek Watershed in Winona County, Minnesota," *Department of Resource Analysis, Saint Mary's University of Minnesota, Winona, MN 55987*, Tidak Diketahui.
- [44] J. Wang, L. Li, Z. Hao and J. J. Gourley, "Stream guiding algorithm for deriving flow direction from DEM and location of main streams," *Cold Region Hydrology in a Changing Climate*, 2011.
- [45] R. Guha, S. Ghosha, K. K. Ghosha and R. Sarkara, "Groundwater Flow Algorithm: A Novel Hydro-geology based Optimization Algorithm," *Research Square*, 2020.
- [46] G. Zhou, W. Hongqiang and S. Fu, "A fast and simple algorithm for calculating flow accumulation matrices from raster digital elevation," *Higher Education Press and Springer-Verlag GmbH Germany*, 2018.
- [47] I. Muhajir, L. Armin and A. Ribal, "Surface Water Flow Simulation using Cellular Automata Based Flow Direction D-Infinity Algorithm," *IEEE*, 2016.
- [48] S. Simaremare, "Analisis Aliran Air Tanah Satu Dimensi (Kajian Laboratorium)," *Jurnal Teknik Sipil dan Lingkungan*, vol. Vol. 3, 2015.
- [49] A. Rosytha and T. M, *Studi Analisa Banjir Dengan Menggunakan Teknologi SIG di Kabupaten Bojonegoro*, Surabaya: Seminar Nasional VII Teknik Sipil ITS, 2011.

- [50] Usman, Ferdinand dkk, Teori dan Aplikasi Opensource GIS Menggunakan Mapwindows, Yogyakarta: Andi Offset, 2008.
- [51] D. Novita, "Analisis Perbandingan DTM (Digital Terrain Model) Dari Lidar (Light Detection And Ranging) Dan Foto Udara Dalam Pembuatan Kontur Peta Rupa Bumi Indonesia," *Skripsi: Institut Teknologi Sepuluh Nopember*, vol. RG141536, 2017.
- [52] J. Afriani, "Pembuatan DEM (Digital Elevation Model) Menggunakan Metode TIN, IDW, dan Kring Dari Data Foto Udara," *Skripsi: Institut Teknologi Sepuluh Nopember*, vol. RG141536, 2016.
- [53] M. R. Ardiansyah, "Siklus Hidrologi," Geografi Sains, 3 Agustus 2020. [Online]. Available: <https://www.geografisains.com/siklus-hidrologi/>. [Accessed 24 Oktober 2021].
- [54] Geo Pranata, "<http://www.geopranata.co.id/>," PT Geo Pranata, [Online]. Available: <http://www.geopranata.co.id/Sampel/DSM-Digital-Surface-Model-and-DTM-Digital-Terrain-Model-.html>. [Accessed 25 Oktober 2021].
- [55] GISPEDIA, "www.gispedia.com/," GISPEDIA, [Online]. Available: <http://www.gispedia.com/2016/03/merubah-raster-ke-vektor-di-arcgis.html>. [Accessed 25 Oktober 2021].
- [56] L. Jiang, G. Tang, X. Jun Liu, X. Song, J. Yang and K. Liu, "Parallel Contributing Area Calculation with Granularity Control on Massive Grid Terrain Datasets," *Computers & Geosciences (Elsevier)*, 2013.
- [57] S. S. Holger Blaar and M. Muller-Hanneman, "Parallelization Strategies to Speed-Up Computations for Terrain Analysis on Multi-Core Processors," *IEEE*, 2012.
- [58] M. Abbasi, M. Rafiee, M. R. Khosravi, A. Jolfaei, V. G. Menon and J. M. Koushyar, "An Efficient Parallel Genetic Algorithm Solution for Vehicle Routing Problem in Cloud Implementation of the Intelligent Transportation

Systems," *Journal of Cloud Computing: Advances, Systems and Applications*, 2020.

- [59] I. P. A. P. Wibawa and S. M. I.A. Dwi Giriantari, "Komputasi Paralel Menggunakan Model Message Passing Pada SIM RS (Sistem Informasi Manajemen Rumah Sakit)," *Majalah Ilmiah Teknologi Elektro*, 2018.
- [60] S. Hidayat, "Pemrosesan Paralel Menggunakan Komputer Heterogen," *Seminar Nasional Aplikasi Teknologi Informasi*, 2006.
- [61] D. M. Wolock and G. J. McCabe Jr., "Comparison of Single and Multiple Flow Direction Algorithms for Computing Topographic Parameters in TOPMODEL," *American Geophysical Union*, 1995.

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