

Mohammad Raditia Pradana

Researcher, SPARC - Department of Geography,
Universitas Indonesia, Depok, Indonesia
M.Sc. in Geography Sciences

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RESEARCH INTERESTS

Street-view imagery (SVI) • Urban data science • Computer vision • Geospatial analysis • Urban green spaces • Urban planning

EDUCATION

M.Sc. in Geography Sciences (Fast-Track Program) — Universitas Indonesia 2024 – 2025

GPA 4.00 / 4.00 | Summa Cum Laude | Ranked 1st in Cohort - Faculty level

Thesis: Spatial Modeling of Visual Element Proportion Diversity in Urban Spaces Based on Street-View and Spatial Indicators (Kebayoran Baru & Tanah Abang)

B.Sc. in Geography (Fast-Track Program) — Universitas Indonesia 2020 – 2024

GPA 3.85 / 4.00 | Cum Laude | Ranked 1st in Cohort - Department level

Thesis: Protection Level for Fire-Prone Areas in East Jakarta City

PUBLICATIONS

Journal Articles

- [1] **Pradana, M.R.** & Semedi, J.M. (2026). Indonesia's urban green spaces dilemma: Balancing law, ecology, and public space, highlighting Jakarta. *Human Geography*. [DOI]
- [2] **Pradana, M.R.**, Dimyati, M. & Gamal, A. (2025). Harmonizing street-view semantics and spatial predictors for dominant urban visual composition modelling. *Computational Urban Science*, 5(50). [DOI]
- [3] **Pradana, M.R.**, Wibowo, A. & Semedi, J.M. (2025). Multi-perspective evaluation of urban green views: Spatial and street-view data integration in Sudirman Central Business District, Indonesia. *Geomatics and Environmental Engineering*, 19(3), 91–114. [DOI]
- [4] **Pradana, M.R.**, Dimyati, M. & Semedi, J.M. (2025). Unveiling greenery and visual comfort: Integrating Green View Index and image segmentation in panoramic rural landscapes. *GeoScape*, 19(2), 143–159. [DOI]
- [5] **Pradana, M.R.** & Dimyati, M. (2024). Tracking urban sprawl: A systematic review and bibliometric analysis of spatio-temporal patterns using remote sensing and GIS. *European Journal of Geography*, 15(3), 190–203. [DOI]
- [6] Gamal, A., **Pradana, M.R.**, Wibisono, B.H., Navitas, P. & Aryal, J. (2025). Thematic fragmentation and convergence in urban flood simulation research: A 45-year bibliometric mapping. *Urban Science*, 9(7), 280. [DOI]
- [7] Semedi, J.M., **Pradana, M.R.**, Putera, D.A. & Rahatiningtyas, N.S. (2024). The impedance of East Jakarta road network to estimate fire station service areas. *Forum Geografi*, 38(2), 280–290. [DOI]

Conference Proceedings

- [1] Semedi, J.M., **Pradana, M.R.**, Permata, C.F., Pratama, R.A., Candra, M.A.N., Rahatiningtyas, N.S. & Dimyati, M. (2026). Visualizing Sustainable Campuses: A Spatiotemporal Deep Learning Analysis of Eye-Level Greenery. *IOP Conference Series: EES*, 1648(1). [DOI]
- [2] **Pradana, M.R.** & Semedi, J.M. (2025). Effortless coastal monitoring: Unsupervised detection of shoreline alterations due to tin mining in Bangka Belitung. *IOP Conference Series: EES*, 1462(1). [DOI]
- [3] Ash-Shidiq, I.P., Supriatna, S., Darmawan, A., Warta, Z., Molidena, E., Valla, A., Hisan, Firdaus, M.I., Zakaria, N.A., Muafiroh, S., **Pradana, M.R.**, Putera, D.A. (2024). Biomass stock estimation using Landsat 8 imagery in Bukit Tigapuluh National Park, Riau. *IOP Conference Series: EES*, 1291(1). [DOI]

Under Review

- [1] **Pradana, M.R.** (In review). Your Academic Career Depends on Your Co-Authors: When Single-Author Papers Do Not Count in Indonesia's Academic Promotion System. *Journal of Academic Ethics*.

- [2] **Pradana, M.R.**, Gamal. A., & Aryal. J. (*In review*). Reframing Urban “Sustainable” Streetscapes: Evidence from Cross-City Transformation and Convergence. *City and Environment Interactions*.
- [3] **Pradana, M.R.**, Gamal. A., & Aryal. J. (*In review*). Interpreting ‘Sustainable’ Urban Streetscapes with Generative AI: Context-Rich vs. Generic Prompting. *Urban Informatics*.

RESEARCH EXPERIENCE

Research Assistant

May 2025 – Present

The Spatial Modeling and Analysis Research Group (SPARC), Dept. of Geography, Universitas Indonesia

- Co-led a university-funded grant (IDR 100 million) on climate resilience in urban parks, integrating street-view imagery and place attachment analysis.
- Mentored 3 undergraduate students across the full research cycle, from data collection and analysis to manuscript preparation.

Full-time Researcher & Assistant Editor of *Smart City Journal*

Oct. 2024 – Jun. 2026

SMART CITY Universitas Indonesia — Research & Community Engagement Unit

- Contributed to professional urban planning projects and co-led a university-funded research study on sustainable streetscapes (manuscript under review), alongside a multi-stakeholder urban flooding research project granted by INSPIRASI as GIS researcher.
- Managed the *Smart City Journal* editorial workflow, including manuscript handling and reviewer coordination.

Part-time Research Assistant

Jun. – Oct. 2024

SMART CITY Universitas Indonesia — Research & Community Engagement Unit

- Conducted GIS and remote sensing analyses using 3D urban data and digital building audits for a government-collaborated urban research project.
- Served as Project-in-Charge, coordinating project implementation and analytical deliverables for an urban research collaboration with government partners.

Student Researcher

Jun. 2023 – Oct. 2024

Department of Geography, Universitas Indonesia

- Conducted fieldwork and spatial analysis on urban fire management in Jakarta, resulting in 1 journal publication and 1 international conference presentation.

PROFESSIONAL EXPERIENCE

Cartographer — SEA, West Bangka Regency

Mar. – Dec. 2025

Center for Social and Environmental Management Research (PPSML), Universitas Indonesia

- Produced 50+ thematic and base maps at multiple cartographic scales for the Strategic Environmental Assessment (SEA) document.

Cartographer — Detailed Spatial Planning, Baradatu District

May – Aug. 2024

Center for Applied Geography Research (PPGT), Universitas Indonesia

- Compiled 20+ large-scale base and thematic maps at 1:5,000 for the district spatial planning (RDTR) document.

Cartographer — SEA, Bangka Belitung Islands Province

Mar. – Oct. 2024

Center for Social and Environmental Management Research (PPSML), Universitas Indonesia

- Produced 40+ thematic maps, including environmental sensitivity and infrastructure layers, for the SEA document.

Cartographer — Regional Spatial Planning, Hulu Sungai Tengah Regency

Jan. – Apr. 2023

Center for Applied Geography Research (PPGT), Universitas Indonesia

- Produced 40+ thematic maps at 1:50,000 scale for the regional spatial planning (RTRW) document in South Kalimantan.

PROJECTS

Research Projects

- Prompting Sustainability: A Comparative Analysis of How Generative AI Interprets and Visualizes Urban 'Sustainable' Streetscapes [[Project page](#)] Oct. 2025 – Present
Funded by Universitas Indonesia
- Cooling Cities, Warming Communities: Quantifying Climate Resilience in Urban Parks Through Anthropomorphic Mapping and Place Attachment [[Project page](#)] May 2025 – Present
Funded by Universitas Indonesia
- Spatial Modeling of Visual Element Proportion Diversity [Master's Thesis] [[Research deliverable](#)] Jun. 2024 – Jun. 2025
Conducted under SMART CITY UI and supported by INSPIRASI Grant Program
- Collaborative Mapping & Mitigation for a Resilient Capital City with Generative AI [[Research deliverable](#)] Jun. 2024 – Dec. 2025
Funded by PRIME Engineering and Universitas Indonesia Grant
- Level of Protection of Fire-Prone Areas in East Jakarta City [[Research deliverable](#)] Aug. 2023 – Jan. 2024
Funded by Faculty of Mathematics and Natural Sciences, Universitas Indonesia

Government Projects

- Innovative Government Awards 2025 — Ministry of Home Affairs (*Lead data scientist*) Sep. 2025 – Nov. 2025
- Strategic Environmental Assessment (SEA) — West Bangka Regency Mar. 2025 – Dec. 2025
- Innovative Government Awards 2024 — Ministry of Home Affairs (*Lead data scientist*) Sep. 2024 – Oct. 2024
- Strategic Environmental Assessment (SEA) — Bangka Belitung Islands Province Mar. 2024 – Oct. 2024

TEACHING EXPERIENCE

Guest Teaching — Data Management and Analysis

Apr. – May 2026

Master Programme of Urban Planning, Universitas Indonesia

- Delivered lectures on database development, statistical analysis, and spatial analysis for graduate urban planning students.

Teaching Assistant — Introduction of GIS & Remote Sensing

Jun. – Aug. 2024

Department of Geography, Universitas Indonesia

- Led practical sessions for 30+ undergraduates across six GIS and remote sensing modules.

PEER REVIEW SERVICE

Humanities and Social Sciences Communications, <i>Springer Nature</i>	2026
GeoJournal, <i>Springer Nature</i>	2026
Journal of Geovisualization and Spatial Analysis, <i>Springer Nature</i>	2026
Discover Environment, <i>Springer Nature</i>	2026
Journal of Mountain Science, <i>Springer Nature</i>	2026
Scientific Reports, <i>Nature Publishing Group</i>	2026
Frontiers in Marine Sciences, <i>Frontiers</i>	2026
Urban Forestry & Urban Greening, <i>Elsevier</i>	2025
Transactions in GIS, <i>Wiley</i>	2025

CONFERENCE PRESENTATIONS

- The 2nd International Conference on Anthropocene, Global Environmental Change & Powerful Geography** (Surakarta, Indonesia) Aug. 2024
Effortless Shoreline Detection in Tin-Mining Areas. [Best Presenter Award]
- The 1st Aceh International Conference in Geography & Environmental Education** (Aceh, Indonesia) Nov. 2023
The Impedance of East Jakarta Road Network to Estimate Fire Station Service Areas.
- The 2nd International Conference of Science & Applied Geography** (Depok, Indonesia) Nov. 2022
Biomass Stock Estimation Using Landsat 8 Imagery in Bukit Tigapuluh National Park.

HONORS & AWARDS

- 2025 **Ranked 1st in Cohort, M.Sc. Geography** — Summa Cum Laude (Faculty Level)
- 2024 **Ranked 1st in Cohort, B.Sc. Geography** — Cum Laude (Department Level)
- 2024 **Fast-Track Program Candidacy**, B.Sc. - M.Sc. Geography — selected based on academic excellence during undergraduate study
- 2024 **Best Presenter Award**, ICoAGPG 2024
- 2022 **2nd Place**, National Economics Paper Competition (IMIE FEB UKSW)

OPEN-SOURCE TOOLS & DATASETS

Open Repositories

- **M2F Playground** — All in one easy to access Notebook repo for Mask2Former inference 2026 
- **GSV Panorama Downloader** — Notebook repo for batch downloading Google Street View panoramas 2025 
- **GSV Downloader by Links** — Notebook repo for downloading Street View imagery via direct links 2025 
- **Facade Dominant Color Extractor** — Notebook repo for extracting color information of building facade from street-view imagery 2025 

Open-Access Datasets

- **genai_sustainablestreetscape** (v2) — Cross-city corpus of 4,186 paired images (raw + GPT-5-generated counterparts) from Jakarta (567), Melbourne (832), and Singapore (694). 2026 
- **Sustainable Streetscape Prompt-Specificity Dataset** (v1) — 100 Jakarta GSV scenes × 3 treatments (raw, context-rich, non-context via GPT-4o), each paired with semantic segmentation masks. 2026 

TECHNICAL SKILLS

- **Urban Analytics:** Street-view imagery, object extraction through computer vision, urban data science, geospatial data science, spatial analysis
- **Programming:** Python (familiar), R (familiar)
- **Geospatial Platforms:** ArcGIS Pro, QGIS, Google Earth Engine
- **Research Computing:** Google Colab, Jupyter Notebook, VS Code, Git, GitHub, LaTeX
- **Quantitative Methods:** Statistical analysis, machine learning, computer vision, dimensionality reduction, systematic literature review, bibliometric analysis