

## Preface: Technical Commission II (Photogrammetry)

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ISPRS Technical Commission II (Photogrammetry) addresses the geometric, radiometric, and multi-temporal aspects of image- and range-based 3D surveying, reconstruction, and modeling. Its scientific scope spans image orientation and fusion, point cloud generation and processing, 3D scene reconstruction, feature extraction, static and dynamic scene analysis, sensor and data integration, vision metrology, and machine learning for geospatial data. These themes are advanced through the Commission's nine Working Groups and two Inter-Commission Working Groups, and applied across mapping, environmental and infrastructure monitoring, cultural heritage, underwater photogrammetry, autonomous platforms, and digital construction.

For the 2026 ISPRS Congress, Technical Commission II received 358 contributions, of which 191 were full-paper submissions. Following a double-blind peer-review process in which each manuscript received two to three independent reviews (selected contributions up to four), 83 full papers were accepted for publication in the ISPRS Annals, corresponding to an acceptance rate of 43% among full-paper submissions. The contributions in this volume will be presented at the Congress as 81 oral and 2 poster presentations.

The accepted contributions span the full thematic breadth of the Commission, yet a clear center of gravity emerges around three-dimensional reconstruction and point cloud processing. Methods built on LiDAR and laser scanning (terrestrial, mobile, airborne, and permanent installations), together with photogrammetric and multi-view stereo pipelines, form the largest body of work, addressing point cloud generation, registration, filtering, semantic and panoptic segmentation, and surface and mesh reconstruction (Working Groups II/2 and II/3). Image orientation, feature matching, structure-from-motion, SLAM, and bundle adjustment remain a strong and active foundation (Working Group II/1), frequently coupled with the treatment of uncertainty, calibration, and quality that connects to the Commission's vision metrology tradition (Working Group II/9).

A pronounced trend in this edition is the rapid uptake of novel neural 3D representations: 3D Gaussian Splatting and neural radiance fields recur across a substantial number of titles, applied to large-scale and satellite-based reconstruction and to dynamic scenes, signaling a shift in how photogrammetric 3D is learned and rendered. Machine learning more broadly, including transformers, foundation models, vision-language models, and self-supervised approaches, pervades contributions across every Working Group rather than forming an isolated theme (Working Groups II/4 and II/6). Building and city modeling with semantic levels of detail, temporal and change-detection analysis (Working Group II/5), and applications spanning underwater data acquisition and bathymetry (Working Group II/7), cultural heritage (Working Group II/8), environmental and infrastructure monitoring, autonomous platforms, and digital construction complete the picture.

The quality of this volume reflects the dedication of many, and thirteen papers were shortlisted by the Working Groups as contenders for the ISPRS Best Paper Award. We sincerely thank the authors for their contributions, the Working Group officers for coordinating the reviews and the scientific program, and the reviewers for their careful and timely evaluations, which ensured the standard of the accepted papers. We are equally grateful to the ISPRS International Program Committee and to the Canadian Remote Sensing Society (CRSS-SCT) for hosting the XXV ISPRS Congress in Toronto.

*On behalf of the Technical Commission II officers,*

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