

Editorial

Foreword to the Special Section on SIBGRAPI 2024[☆]

The Conference on Graphics, Patterns, and Images (SIBGRAPI) is an international conference annually promoted by the Brazilian Computer Society (SBC) through its Special Interest Group on Computer Graphics and Image Processing (CEGRAP). It is the most important forum in Latin America for the fields of Computer Graphics, Image Processing, Computer Vision, and Pattern Recognition. As one of Brazil's most traditional and respected scientific events in Computer Science, SIBGRAPI gathers researchers, students, and professionals from universities, industry, and research centers worldwide.

The 37th edition of SIBGRAPI was held in an in-person format from September 30th to October 3rd, 2024, in the beautiful city of Manaus, Amazonas, located in northern Brazil, and was hosted by the State University of Amazonas (UEA). Moreover, SIBGRAPI 2024 was realized jointly with two other major events: the Symposium on Virtual and Augmented Reality (SVR 2024) and the Symposium on Computer Games and Digital Entertainment (SBGames 2024).

The proceedings of the conference have been published by the IEEE Computer Society Press and are available in the IEEE Xplore digital library [1], continuing a tradition that started in 1997. In addition, a small number of SIBGRAPI 2024 featured papers have been published as a Special Section of Elsevier's Computers & Graphics Journal (C&G) and as a Special Stream of the IEEE Geoscience and Remote Sensing Letters (IEEE GRSL). These journal papers were selected before the conference via a special call for papers.

The event featured an excellent technical program that included 48 full papers, all presented orally at the conference. Each submission was reviewed by at least three members of the Program Committee to ensure high-quality standards. This year, the full papers published in the conference proceedings underwent a two-stage double-blind review process, similar to the articles published in the C&G and IEEE GRSL journals.

In line with previous editions, the authors of the three best papers on Pattern Recognition and related fields were invited to submit an extended version of their work for this Special Section of the Pattern Recognition Letters (PRL) journal. The extended version of each invited paper underwent the standard, rigorous PRL peer-review process, and all three were subsequently accepted for publication.

The first paper, "A self-supervised contrastive learning approach for latent fingerprint identification," by Nobrega et al. [2], addresses the significant challenge of identifying latent fingerprints. The authors introduce a novel self-supervised contrastive learning framework to generate robust minutiae embeddings. A key contribution of their work is a synthetic latent fingerprint generator that creates realistic training

data by simulating various degradations, thus improving fingerprint representation and matching performance on standard benchmarks.

The second paper, "Streamlined extended Long Short-Term Memory for video skimming," by Cardoso et al. [3], proposes StreamExLSTM, a supervised deep learning architecture for video summarization. Their model uses a dual-path design with two lightweight modules to effectively capture both short-term and long-term temporal dependencies. This allows for the creation of concise and coherent video summaries that balance local detail with the global narrative structure, showing strong performance on established datasets.

The third paper, "Using traditional and Bayesian neural networks for fast parameter estimation in SAR images," by Fan and Rocha Neto [4], presents a novel framework for estimating the roughness parameter in Synthetic Aperture Radar (SAR) imagery. Their approach uses a neural network trained on simulated data to predict roughness from sample log-moments, proving to be faster and more robust than traditional methods. The authors also propose a Bayesian version of their network, which provides valuable uncertainty estimates for the predictions.

As Program Chairs of SIBGRAPI 2024 and Guest Editors of this Special Section, we would like to express our sincere gratitude to everyone who contributed to its success. We thank the authors for their excellent contributions and the reviewers for their diligent, insightful feedback. We are also grateful to Prof. Maria De Marsico, Editor-in-Chief, and the editorial staff, particularly Mohammed Samiullah, for their invaluable guidance and support. Finally, our gratitude also extends to the entire SIBGRAPI 2024 organizing team, whose efforts resulted in an outstanding conference. For further information about SIBGRAPI 2024, please visit the official website: <https://sibgrapi.sbc.org.br/2024/>.

References

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