



INTERNATIONAL JOINT CONFERENCE ON NEURAL NETWORKS

IJCNN2025

30 JUNE - 5 JULY 2025 ROME, ITALY



INTERNATIONAL NEURAL NETWORK SOCIETY

The 1st ComBayNS Workshop

Combining Bayesian and Neural approaches for Structured data

WORKSHOP WEBSITE: [HTTPS://COMBAYNS2025.GITHUB.IO](https://combayns2025.github.io)

The **neural network** and **Bayesian** machine learning communities have historically struggled to come together due to philosophical differences and different metrics of success. Yet, there is much to gain by combining probabilistic approaches and neural architectures to endow the latter, for instance, with the ability to perform uncertainty quantification, handle missing data, and learn and sample from structured data distributions. The aim of this workshop is to encourage such a convergence of ideas in the domain of structured data, such as sequences, trees, directed acyclic graphs, graphs, and general geometries.

We welcome **short (4 pages)** and **full (8 pages)** paper submissions. Short papers **will not** be included in IJCNN 2025 proceedings, whereas full papers undergo a regular review process and **will** be published in IJCNN 2025 proceedings. Submissions should target the following topics:

- Bayesian learning and probabilistic methods for structured data (sequences, trees, DAGs, graphs, general geometries)
- Dynamic variational methods for structured data
- Bayesian nonparametrics for structured data
- Probabilistic rewiring on graphs
- Variational models for structured data generation
- Flow-based models for structured data generation
- Discrete and continuous diffusion probabilistic models for structured data generation
- Expressivity of neural-probabilistic approaches for structured data
- Bayesian causal structure learning for explainable and trustworthy AI
- Random walk approaches on structured data
- Uncertainty modeling on structured data

SUBMISSION DEADLINE: **March 20, 2025**

SUBMISSION LINK: [HTTPS://CMT3.RESEARCH.MICROSOFT.COM/IJCNN2025/TRACK/3/SUBMISSION/CREATE](https://cmt3.research.microsoft.com/IJCNN2025/Track/3/Submission/Create)

(SELECT **ComBayNS** AS "PRIMARY SUBJECT AREA")

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