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Crafting Analytic Normalizing Flows

Thursday 4 December 2025 09:40 (40 minutes)

A key challenge in designing discrete normalizing flows is to find expressive parametrized transformations that remain invertible and with tractable Jacobian determinant. Existing approaches face trade-offs: affine transformations are simple but limited, while splines are expressive but piecewise-continuous and bounded. We introduce a family of analytic bijections that are smooth, globally defined, and analytically invertible, bridging the gap between simple and piecewise methods. Besides applying these bijections in coupling flows, we explore novel architectures including interpretable "network free" approaches.

Special requests

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