

PhD viva

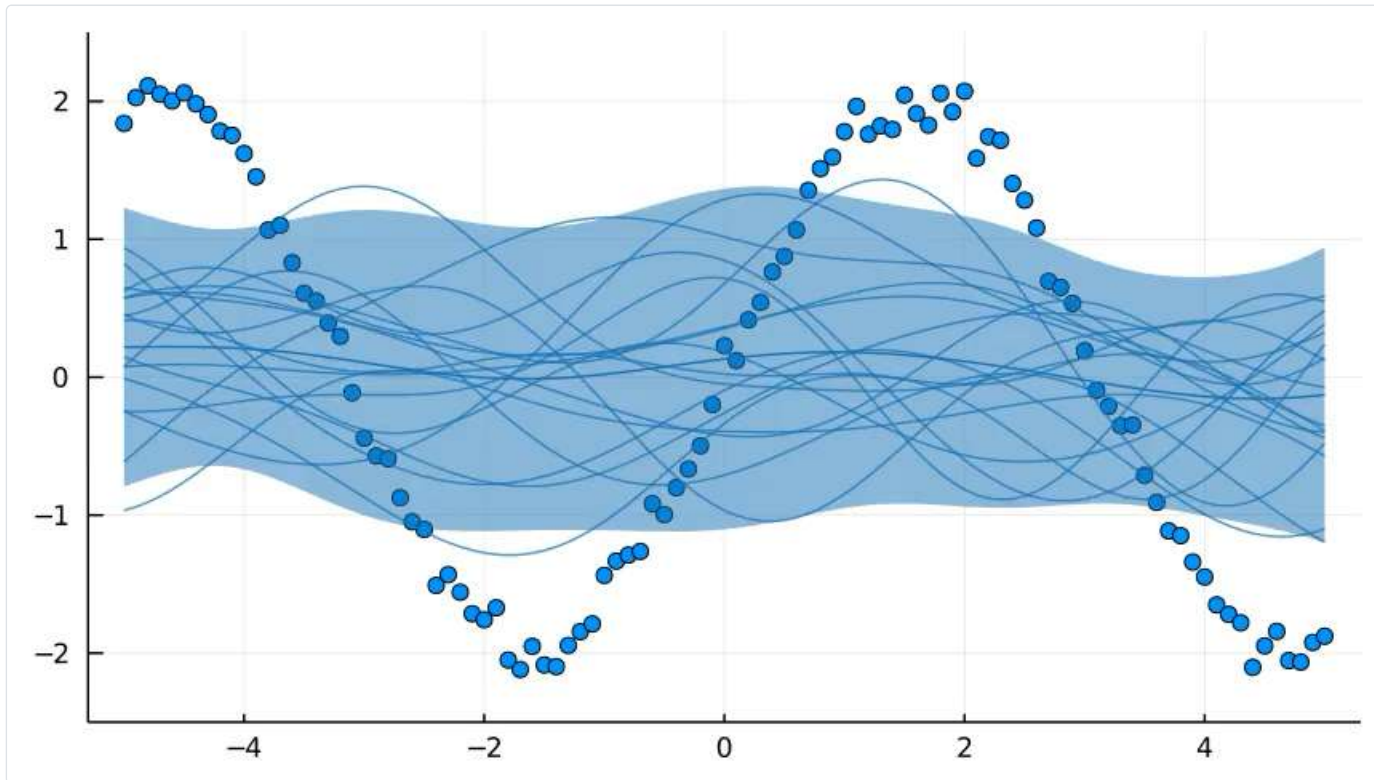
Gaussian Processes and and Statistical Decision-making in Non-Euclidean spaces

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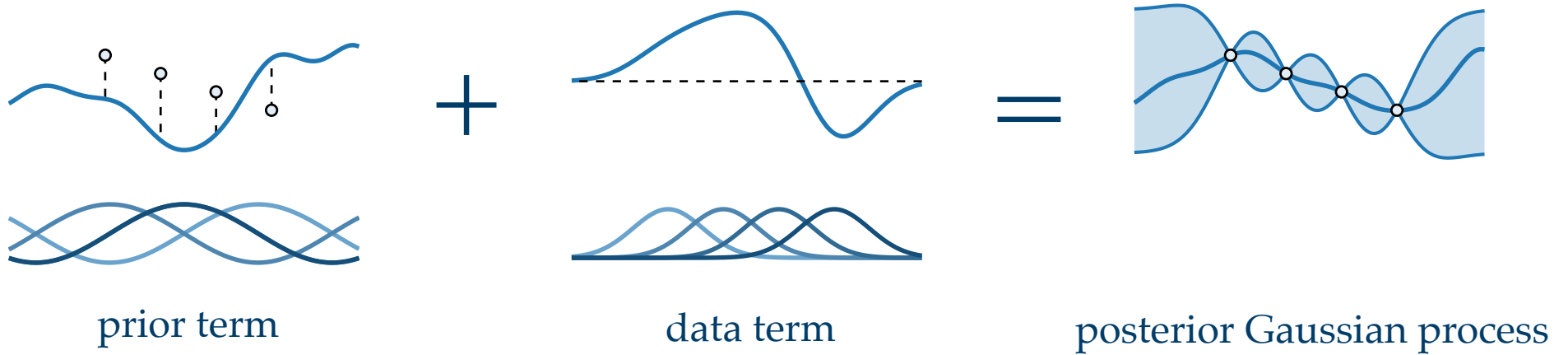
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Gaussian Processes



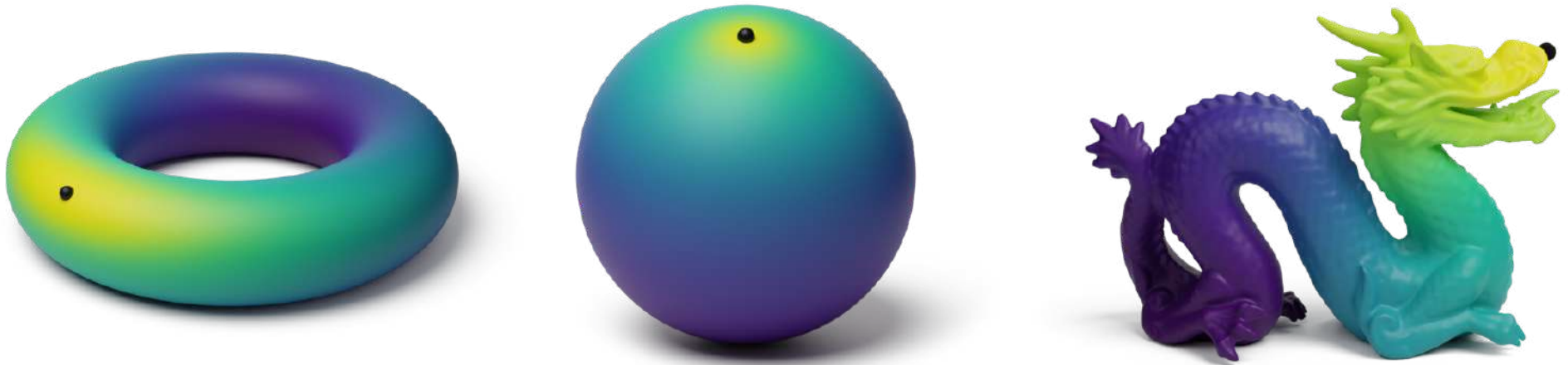
Statistical Decision-making

Pathwise Conditioning



$$(f | y)(\cdot) = \underbrace{f(\cdot)}_{\mathcal{O}(N_*^3)} + \mathbf{K}_{(\cdot)\mathbf{x}} \underbrace{\mathbf{K}_{\mathbf{x}\mathbf{x}}^{-1}}_{\mathcal{O}(N^3)} (\mathbf{y} - f(\mathbf{x}))$$

Riemannian Matérn Gaussian Processes



Riemannian Matérn Gaussian Processes



(a) Ground truth



(b) Posterior mean

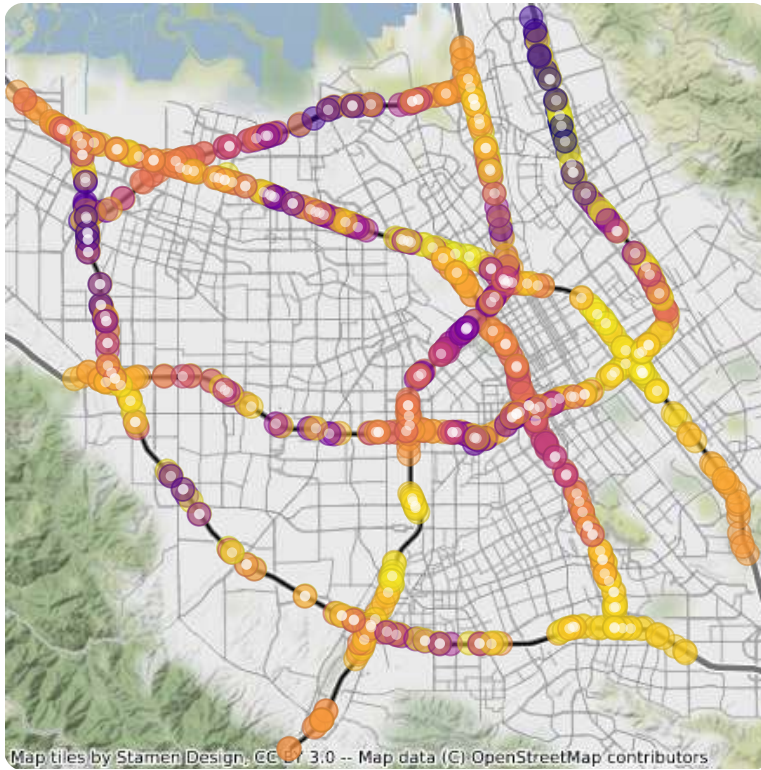


(c) Standard deviation

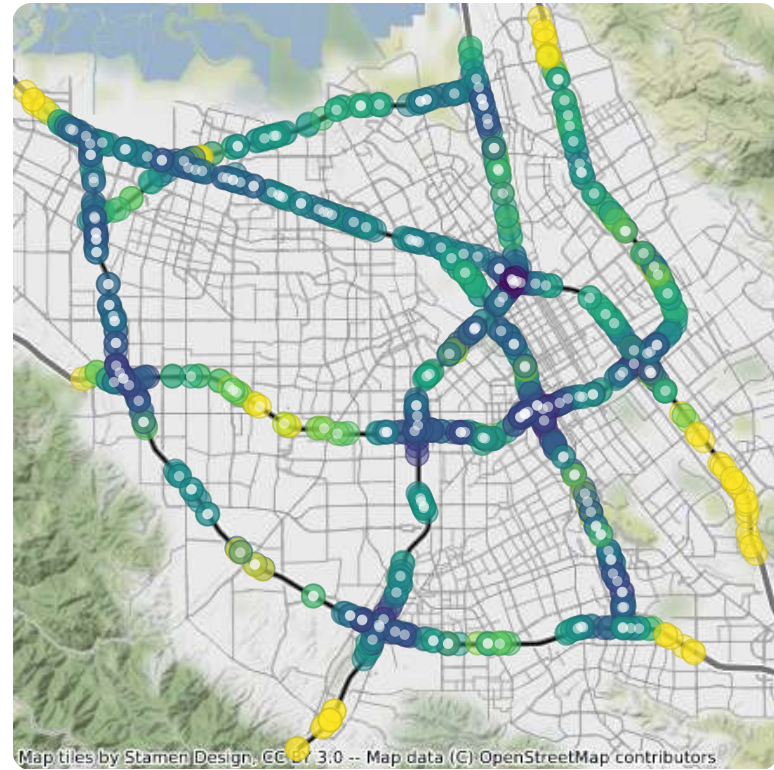


(d) Posterior sample

Graph Matérn Gaussian Processes

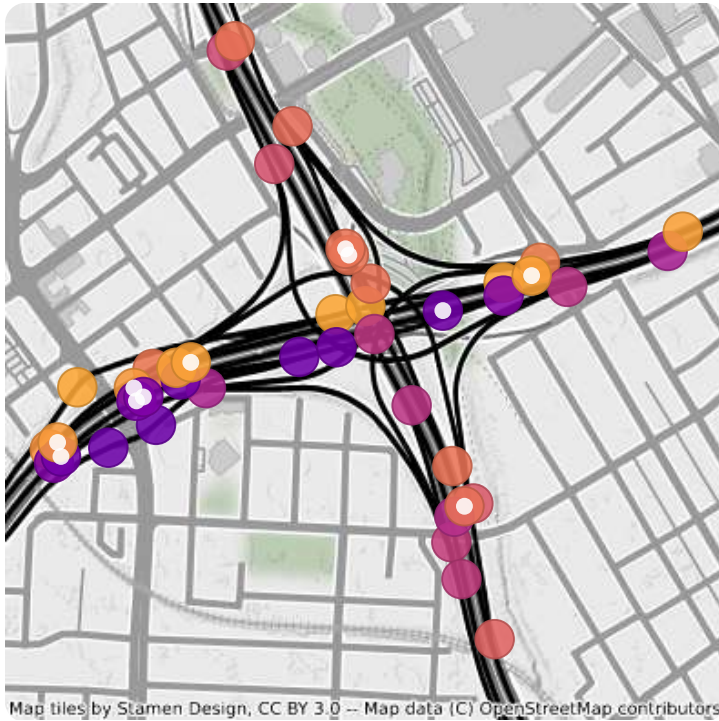


(a) Predictive mean

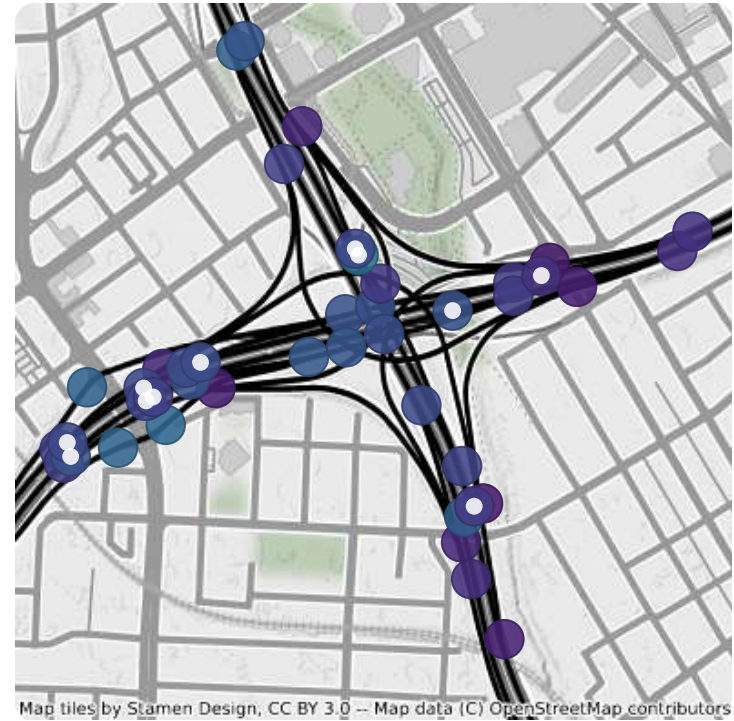


(b) Standard deviation

Graph Matérn Gaussian Processes

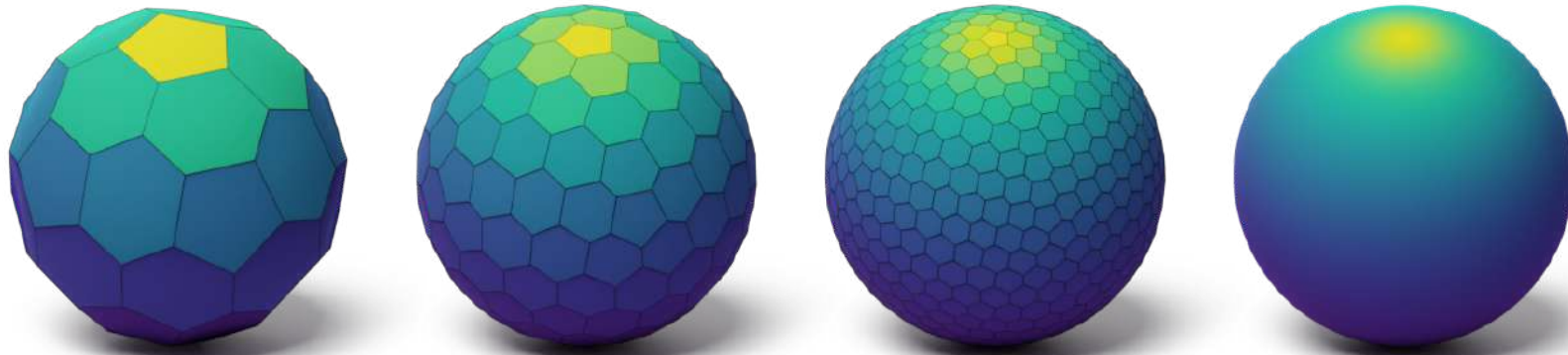


(a) Predictive mean



(b) Standard deviation

Graph Matérn Gaussian Processes



Gaussian Vector Fields



Thank you!

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*Equal contribution