Master's thesis projects in the area of

Simulation of random fields and stochastic (partial) differential equations

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My research area is in efficient *approximation* methods for *random fields* and *stochastic (partial) differential equations* in Euclidean space and on manifolds. Please find more details and current open projects on my personal page `http://www.math.chalmers.se/~langa/`.

If you are interested in a project, please contact me at annika.lang@chalmers.se to discuss possible directions that fit your interests.

Suggested courses that are good as preparation for a thesis in the research area include (but no requirement!)

- MVE565/MMA630 Computation Methods for SDEs
- TMS088/MSA410 Financial Time Series
- TMS165/MSA350 Stochastic Calculus
- TMA285/MMA711 Financial Derivatives and Partial Differential Equations
- TMA026/MMA430 Partial Differential Equations II
- TMV100/MMA110 Integration theory

I am also interested in the *foundations of AI* and more specifically the relation of stochastic (partial) differential equations to deep learning which might help to understand the success of neural networks from a mathematical perspective.