Possible Project 3

The aim is to explore the possibility of designing new schemes for SDEs using random nets.

Explore whether random nets will help for better SDE solvers. Literature include "Complexity of Banach spaces valued and parameteric stochastic Ito integration", "'On an approximation problem for stochastic integrals where random time nets do not help' and also a recent work "two quadrature rules for stochastic Ito-integrals with fractional Sobolev regularity"

- You may summarize some tradtional SDE solvers and how random nets improve the estimates.
- If you want to have something new, explore whether the random nets will help to improve the estimates of the SDE schemes, when the coefficients are not so good (mimicking the references).