# List of projects : Deep Learning for PDE

The project should be realized by groups of two or three:

- Choice of a research paper in the list below.
- Reading, understanding and discussion.
- Illustration of the results of the paper with implementation of an algorithm.
- Writing of a report (8 pages maximum) and submission of the .ipynb or .py file.

Delivery of the reports (PDF file) and associated code at last on **March 31, 2026**.

(1) W. Cai, S. Fang, W. Zhang, T. Zhou (2024). *Martingale deep learning for very high-dimensional quasi-linear partial differential equations and stochastic optimal control.* arXiv:2408.14395.

(2) C. Huré, H. Pham, X. Warin (2019). *Deep backward schemes for high-dimensional nonlinear partial differential equations.* arXiv:1902.01599.

(3) K. Andersson, A. Gnoatto, M. Patacca, A. Picarelli (2024). *A deep solver for BSDEs with jumps.* arXiv:2211.04349.

(4) A. Jacquier, M. Oumgari (2023). *Deep curve-dependent PDEs for affine rough volatility.* arXiv:1906.02551.

(5) A. Davey, H. Zheng (2021). *Deep learning for constrained utility maximization.* arXiv:2008.11757.