Bibliography

Nicola Demo

March 6, 2024

References

- [1] A. Ivagnes, N. Demo, and G. Rozza, "A shape optimization pipeline for marine propellers by means of reduced order modeling techniques," *International Journal for Numerical Methods in Engineering*, 2024. DOI: 10.1002/nme.7426. arXiv: 2305.07515 [math.OC].
- [2] F. Andreuzzi, N. Demo, and G. Rozza, "A dynamic mode decomposition extension for the forecasting of parametric dynamical systems," *SIAM Journal on Applied Dynamical Systems*, vol. 22, no. 3, pp. 2432–2458, 2023. DOI: 10.1137/22M1481658. arXiv: 2110.09155 [math.NA].
- [3] D. Coscia, A. Ivagnes, N. Demo, and G. Rozza, "Physics-informed neural networks for advanced modeling," *Journal of Open Source Software*, 2023. DOI: 10.21105/joss.05352. [Online]. Available: https://doi.org/10.21105/joss.05352.
- [4] D. Coscia, L. Meneghetti, N. Demo, G. Stabile, and G. Rozza, "A continuous convolutional trainable filter for modelling unstructured data," *Computational Mechanics*, 2023. DOI: 10.1007/s00466-023-02291-1. arXiv: 2210.13416 [cs.LG].
- [5] N. Demo, M. Strazzullo, and G. Rozza, "An extended physics informed neural network for preliminary analysis of parametric optimal control problems," Computers & Mathematics with Applications, vol. 143, pp. 383-396, 2023, ISSN: 0898-1221. DOI: 10.1016/j.camwa.2023.05.004. arXiv: 2110.13530 [cs.LG]. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S0898122123002018.
- [6] N. Demo, M. Tezzele, and G. Rozza, "A deeponet multi-fidelity approach for residual learning in reduced order modeling," *Advanced Modeling and Simulation in Engineering Sciences*, vol. 10, no. 1, p. 12, Jul. 2023. DOI: 10.1186/s40323-023-00249-9. arXiv: 2302.12682 [math.NA].
- [7] A. Ivagnes, N. Demo, and G. Rozza, "Towards a machine learning pipeline in reduced order modelling for inverse problems: Neural networks for boundary parametrization, dimensionality reduction and solution manifold approximation," *Journal of Scientific Computing*, vol. 95, no. 23, 2023. DOI: 10.1007/s10915-023-02142-4. arXiv: 2210.14764 [math.NA].

- [8] L. Meneghetti, N. Demo, and G. Rozza, "A dimensionality reduction approach for convolutional neural networks," Applied Intelligence, vol. 53, no. 19, pp. 22818–22833, Oct. 2023, ISSN: 1573-7497. DOI: 10.1007/s10489-023-04730-1. arXiv: 2110.09163 [cs.LG]. [Online]. Available: https://doi.org/10.1007/s10489-023-04730-1.
- [9] M. Teruzzi, N. Demo, and G. Rozza, "A graph-based framework for complex system simulating and diagnosis with automatic reconfiguration," 2023. arXiv: 2302.06473 [eess.SY].
- [10] N. Demo, M. Tezzele, G. Stabile, and G. Rozza, "Chapter 19: Scientific software development and packages for reduced order models in computational fluid dynamics," in *Advanced Reduced Order Methods and Applications in Computational Fluid Dynamics*. 2022, pp. 379–387. DOI: 10.1137/1.9781611977257.ch19. [Online]. Available: https://epubs.siam.org/doi/abs/10.1137/1.9781611977257.ch19.
- [11] L. Meneghetti, N. Demo, and G. Rozza, "A proper orthogonal decomposition approach for parameters reduction of single shot detector networks," in 2022 IEEE International Conference on Image Processing (ICIP), 2022, pp. 2206–2210. DOI: 10.1109/ICIP46576.2022.9897513. arXiv: 2210.13416 [cs.CV].
- [12] L. Meneghetti, N. Shah, M. Girfoglio, et al., "Chapter 20: A deep learning approach to improving reduced order models," in Advanced Reduced Order Methods and Applications in Computational Fluid Dynamics. 2022, pp. 389-413. DOI: 10.1137/1.9781611977257.ch20. eprint: https://epubs.siam.org/doi/pdf/10.1137/1.9781611977257.ch20. [Online]. Available: https://epubs.siam.org/doi/abs/10.1137/1.9781611977257.ch20.
- [13] A. Mola, N. Demo, M. Tezzele, and G. Rozza, "Chapter 17: Geometrical parametrization and morphing techniques with applications," in Advanced Reduced Order Methods and Applications in Computational Fluid Dynamics. 2022, pp. 345–364. DOI: 10.1137/1.9781611977257.ch17. [Online]. Available: https://epubs.siam.org/doi/abs/10.1137/1.9781611977257.ch17.
- [14] G. Ortali, N. Demo, and G. Rozza, "Gaussian process approach within a data-driven POD framework for fluid dynamics engineering problems," *Mathematics in Engineering*, vol. 4, no. 3, pp. 1–16, 2022. DOI: 10.3934/mine.2022021. arXiv: 2012.01989 [math.NA].
- [15] D. Papapicco, N. Demo, M. Girfoglio, G. Stabile, and G. Rozza, "The neural network shifted-proper orthogonal decomposition: A machine learning approach for non-linear reduction of hyperbolic equations," Computer Methods in Applied Mechanics and Engineering, vol. 392, p. 114687, 2022, ISSN: 0045-7825. DOI: https://doi.org/10.1016/j.cma.2022.114687. arXiv: 2108.06558 [math.NA]. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S004578252200069X.

- [16] M. Tezzele, N. Demo, A. Mola, and G. Rozza, "An integrated data-driven computational pipeline with model order reduction for industrial and applied mathematics," in *Novel Mathematics Inspired by Industrial Challenges*, M. Günther and W. S. Wil, Eds. Springer International Publishing, 2022, pp. 179–200, ISBN: 978-3-030-96173-2. DOI: 10.1007/978-3-030-96173-2_7. arXiv: 1810.12364 [math.NA]. [Online]. Available: https://doi.org/10.1007/978-3-030-96173-2_7.
- [17] M. Tezzele, N. Demo, G. Stabile, and G. Rozza, "Chapter 9: Nonintrusive data-driven reduced order models in computational fluid dynamics," in Advanced Reduced Order Methods and Applications in Computational Fluid Dynamics. 2022, pp. 203–222. DOI: 10.1137/1.9781611977257. ch9. eprint: https://epubs.siam.org/doi/pdf/10.1137/1.9781611977257.ch9. [Online]. Available: https://epubs.siam.org/doi/abs/10.1137/1.9781611977257.ch9.
- [18] N. Demo, M. Tezzele, A. Mola, and G. Rozza, "Hull shape design optimization with parameter space and model reductions, and self-learning mesh morphing," *Journal of Marine Science and Engineering*, vol. 9, no. 2, 2021, ISSN: 2077-1312. DOI: 10.3390/jmse9020185. arXiv: 2101.03781 [math.NA]. [Online]. Available: https://www.mdpi.com/2077-1312/9/2/185.
- [19] N. Demo, M. Tezzele, and G. Rozza, "A supervised learning approach involving active subspaces for an efficient genetic algorithm in high-dimensional optimization problems," *SIAM Journal on Scientific Computing*, vol. 43, no. 3, B831–B853, 2021. DOI: 10.1137/20M1345219. arXiv: 2006.07282 [math.NA].
- [20] N. Demo, G. Ortali, G. Gustin, G. Rozza, and G. Lavini, "An efficient computational framework for naval shape design and optimization problems by means of data-driven reduced order modeling techniques," Bollettino dell'Unione Matematica Italiana, Nov. 2020, ISSN: 2198-2759. DOI: 10.1007/s40574-020-00263-4. arXiv: 2004.11201 [math.NA]. [Online]. Available: https://doi.org/10.1007/s40574-020-00263-4.
- [21] F. Garotta, N. Demo, M. Tezzele, M. Carraturo, A. Reali, and G. Rozza, "Reduced order isogeometric analysis approach for PDEs in parametrized domains," in *Quantification of Uncertainty: Improving Efficiency and Technology: QUIET selected contributions*, M. D'Elia, M. Gunzburger, and G. Rozza, Eds. Springer International Publishing, 2020, pp. 153–170, ISBN: 978-3-030-48721-8. DOI: 10.1007/978-3-030-48721-8_7. arXiv: 1811. 08631 [math.NA]. [Online]. Available: https://doi.org/10.1007/978-3-030-48721-8_7.
- [22] M. Tezzele, N. Demo, A. Mola, and G. Rozza, "PyGeM: Python geometrical morphing," Software Impacts, p. 100047, 2020, ISSN: 2665-9638.
 DOI: https://doi.org/10.1016/j.simpa.2020.100047. [Online].
 Available: http://www.sciencedirect.com/science/article/pii/S2665963820300385.

- [23] M. Tezzele, N. Demo, G. Stabile, A. Mola, and G. Rozza, "Enhancing cfd predictions in shape design problems by model and parameter space reduction," *Advanced Modeling and Simulation in Engineering Sciences*, vol. 7, no. 1, p. 40, Oct. 2020, ISSN: 2213-7467. DOI: 10.1186/s40323-020-00177-y. arXiv: 2001.05237 [math.NA]. [Online]. Available: https://doi.org/10.1186/s40323-020-00177-y.
- [24] N. Demo, M. Tezzele, A. Mola, and G. Rozza, "A complete data-driven framework for the efficient solution of parametric shape design and optimisation in naval engineering problems," in VIII International Conference on Computational Methods in Marine Engineering, 2019. arXiv: 1905.05982 [math.NA].
- [25] N. Demo, M. Tezzele, and G. Rozza, "A non-intrusive approach for the reconstruction of POD modal coefficients through active subspaces," Comptes Rendus Mécanique, vol. 347, no. 11, pp. 873–881, Nov. 2019. DOI: 10. 1016/j.crme.2019.11.012. arXiv: 1907.12777 [math.NA]. [Online]. Available: https://doi.org/10.1016/j.crme.2019.11.012.
- [26] M. Tezzele, N. Demo, and G. Rozza, "Shape optimization through proper orthogonal decomposition with interpolation and dynamic mode decomposition enhanced by active subspaces," in VIII International Conference on Computational Methods in Marine Engineering, 2019. arXiv: 1905.05483 [math.NA].
- [27] N. Demo, M. Tezzele, G. Gustin, G. Lavini, and G. Rozza, "Shape optimization by means of proper orthogonal decomposition and dynamic mode decomposition," in *Technology and Science for the Ships of the Future: Proceedings of NAV 2018: 19th International Conference on Ship & Maritime Research*, IOS Press, 2018, pp. 212–219. DOI: 10.3233/978-1-61499-870-9-212. arXiv: 1803.07368 [math.NA].
- [28] N. Demo, M. Tezzele, A. Mola, and G. Rozza, "An efficient shape parametrisation by free-form deformation enhanced by active subspace for hull hydrodynamic ship design problems in open source environment," in *The 28th International Ocean and Polar Engineering Conference*, 2018. arXiv: 1801.06369 [math.NA].
- [29] N. Demo, M. Tezzele, and G. Rozza, "EZyRB: Easy reduced basis method," Journal of Open Source Software, vol. 3, no. 24, p. 661, Apr. 2018. DOI: 10.21105/joss.00661. [Online]. Available: https://doi.org/10.21105/joss.00661.
- [30] N. Demo, M. Tezzele, and G. Rozza, "PyDMD: Python dynamic mode decomposition," *Journal of Open Source Software*, vol. 3, no. 22, p. 530, Feb. 2018. DOI: 10.21105/joss.00530. [Online]. Available: https://doi.org/10.21105/joss.00530.
- [31] G. Rozza, M. H. Malik, N. Demo, et al., "Advances in Reduced Order Methods for Parametric Industrial Problems in Computational Fluid Dynamics," in *Proceedings of the ECCOMAS Congress 2018*, ECCOMAS, Glasgow, UK: ECCOMAS, 2018. arXiv: 1811.08319 [math.NA].

- [32] M. Tezzele, N. Demo, M. Gadalla, A. Mola, and G. Rozza, "Model order reduction by means of active subspaces and dynamic mode decomposition for parametric hull shape design hydrodynamics," in *Technology and Science for the Ships of the Future: Proceedings of NAV 2018: 19th International Conference on Ship & Maritime Research*, IOS Press, 2018, pp. 569–576. DOI: 10.3233/978-1-61499-870-9-569. arXiv: 1803.07377 [math.NA].
- [33] E. Calore, N. Demo, S. F. Schifano, and R. Tripiccione, "Experience on vectorizing lattice boltzmann kernels for multi- and many-core architectures," in *Parallel Processing and Applied Mathematics*. Springer International Publishing, 2016, pp. 53–62, ISBN: 978-3-319-32149-3. DOI: 10.1007/978-3-319-32149-3_6. [Online]. Available: https://doi.org/10.1007/978-3-319-32149-3_6.