SciML - Applications and Cases Studies

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Program

1. Applications of scientific machine learning
   (a) Fluid dynamics
   (b) Materials science
   (c) Biology
   (d) Medicine
   (e) The challenges of applying scientific machine learning to different scientific domains

2. Case studies in scientific machine learning
   (a) Solving partial differential equations with neural networks
   (b) Predicting protein structures with deep learning
   (c) Diagnosing diseases with machine learning
   (d) Epidemiology with machine learning
   (e) The use of case studies to illustrate the power of scientific machine learning
   (f) The challenges of applying scientific machine learning to real-world problems

APPLICATIONS

Applications in Fluid Dynamics

Applications in Material Science

Applications in Biology

Applications in Medecine

CASE STUDIES

Solving PDEs

Predicting protein structures

Diagnosing diseases with Scientific machine learning

Epidemiology with Scientific machine learning

Bibliography

References

[1] M. Asch. *Digital Twins: from Model-Based to Data-Driven.* SIAM, 2022.