



PROGRAMME
DE RECHERCHE
NUMÉRIQUE
POUR L'EXASCALE

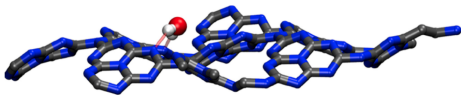
Scalable tensor algebra on top of runtime systems

Brieuc Nicolas

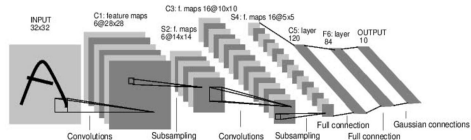
September 25, 2025

Centre Inria de l'Université de Bordeaux

Coupled Cluster Theory

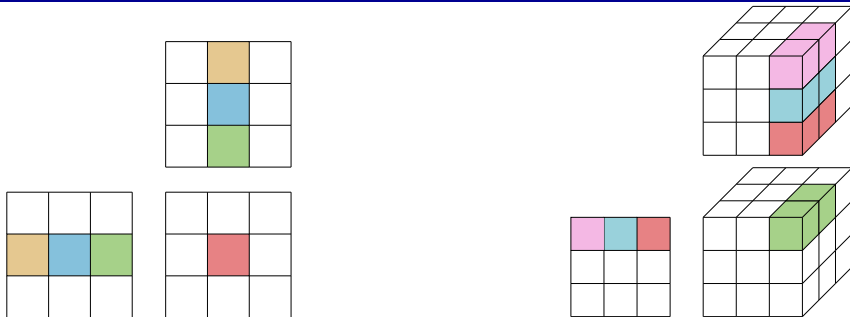


Artificial Intelligence



Tensor Contraction

Generalisation of the matrix product



Asynchronous tensor operations chained together



Questions

- Tensor Contractions
- Task based approach
- Tensor transpositions bottleneck
- Scalability on distributed heterogeneous architectures