Learning Variable Activity Initialisation for Lazy Clause Generation Solvers

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improving the performance of Chuffed, a Lazy-Clause-Generation solver,
by influencing the LCG variable selection heuristic

improving the performance of Chuffed, a Lazy-Clause-Generation solver,
by using machine learning to predict unsatisfiable cores,
and using those predictions to initialise VSIDS variable weights

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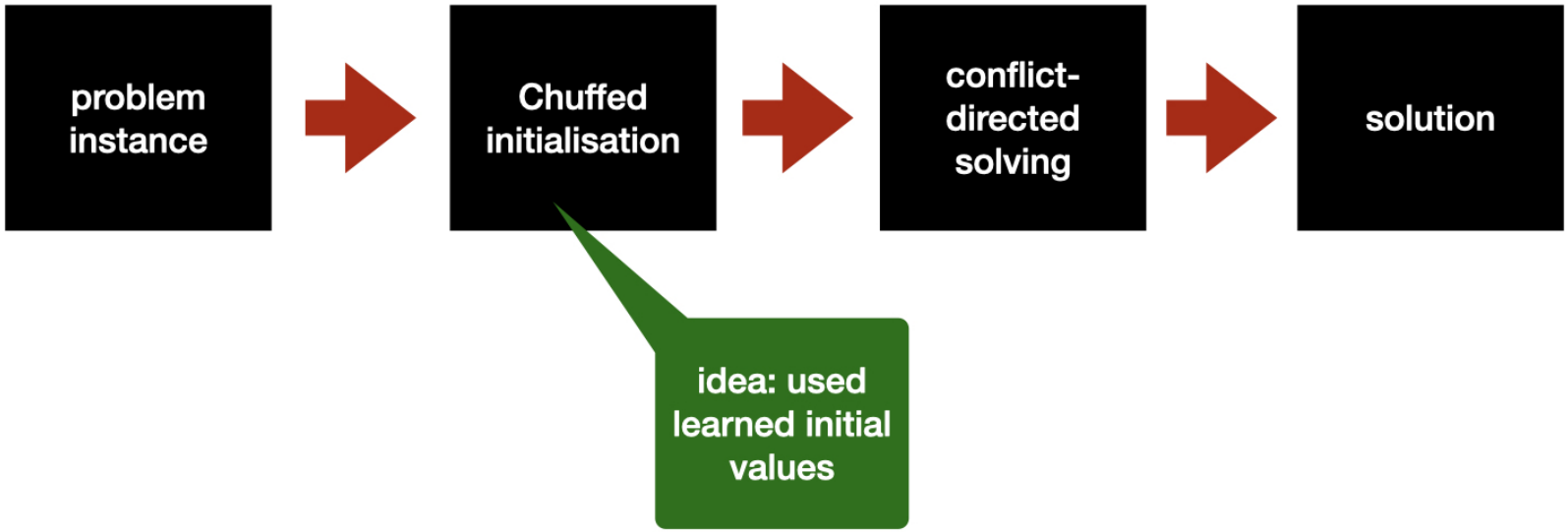
What?



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How?

train on unsatisfiable CP instances

predict unsat cores for satisfiable instances

initialise Chuffed's VSIDS scores based on predictions

Chuffed regular solving

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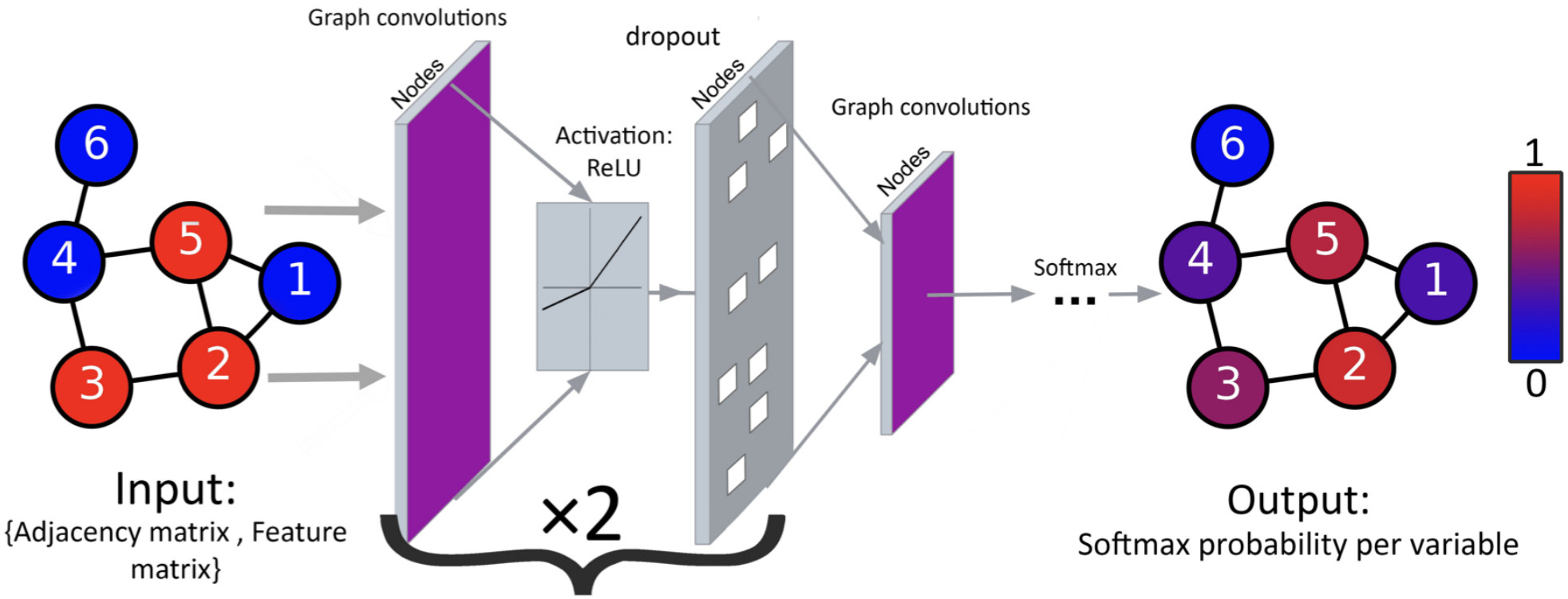
ML model



Input:
{Adjacency matrix , Feature matrix}

Output:
Softmax probability per variable

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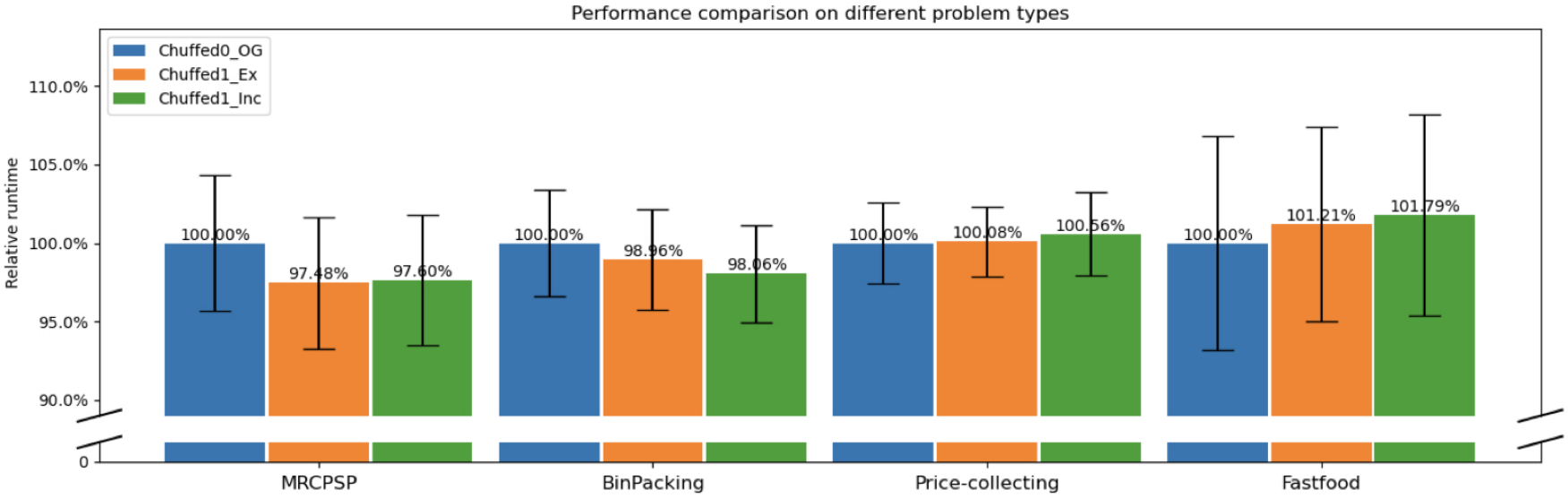
Chuffed + learned inits wins



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