**Résumé d’article**

**Abstract**

* Learning simple algorithms : copying, multi-digit addition, single digit multiplication -> directly from examples.
* « Our framework consists of a set of **interfaces**, accessed by a **controller**» : typical interfaces are 1D trapes or 2D grids that hold the input and ouput data. The controller -> NN models which vary in their ability to abstract the underlying algorithm from training instances and generalize to test examples with many thousands of digits.
* - The controller -> trained using **Q-learning**

1. **Introduction**

This paper explores how machines can learn algorithms involving a similar compositional structure ie. Sequencing of operations -> problem considered is arithmetic because the operations are very simple.

The controller is a neural network model which must learn to control the interfaces, via a set of discrete actions (e.g. “move input tape left”, “read”, “write symbol to output tape”, “write nothing this time step” ) to produce the correct output for given input patterns.