

**Learning programs through play**

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- Hand-crafted rules
- Supervised multitask learning
- Self-supervised learning

# Idea



# Playing

1. Generate random tasks
2. Learn solutions to them
3. Add solutions to the BK

**Why?**

We increase branching but reduce depth



## **Input**

## **Output**

22 July, 1983 (35 years old)

JUL

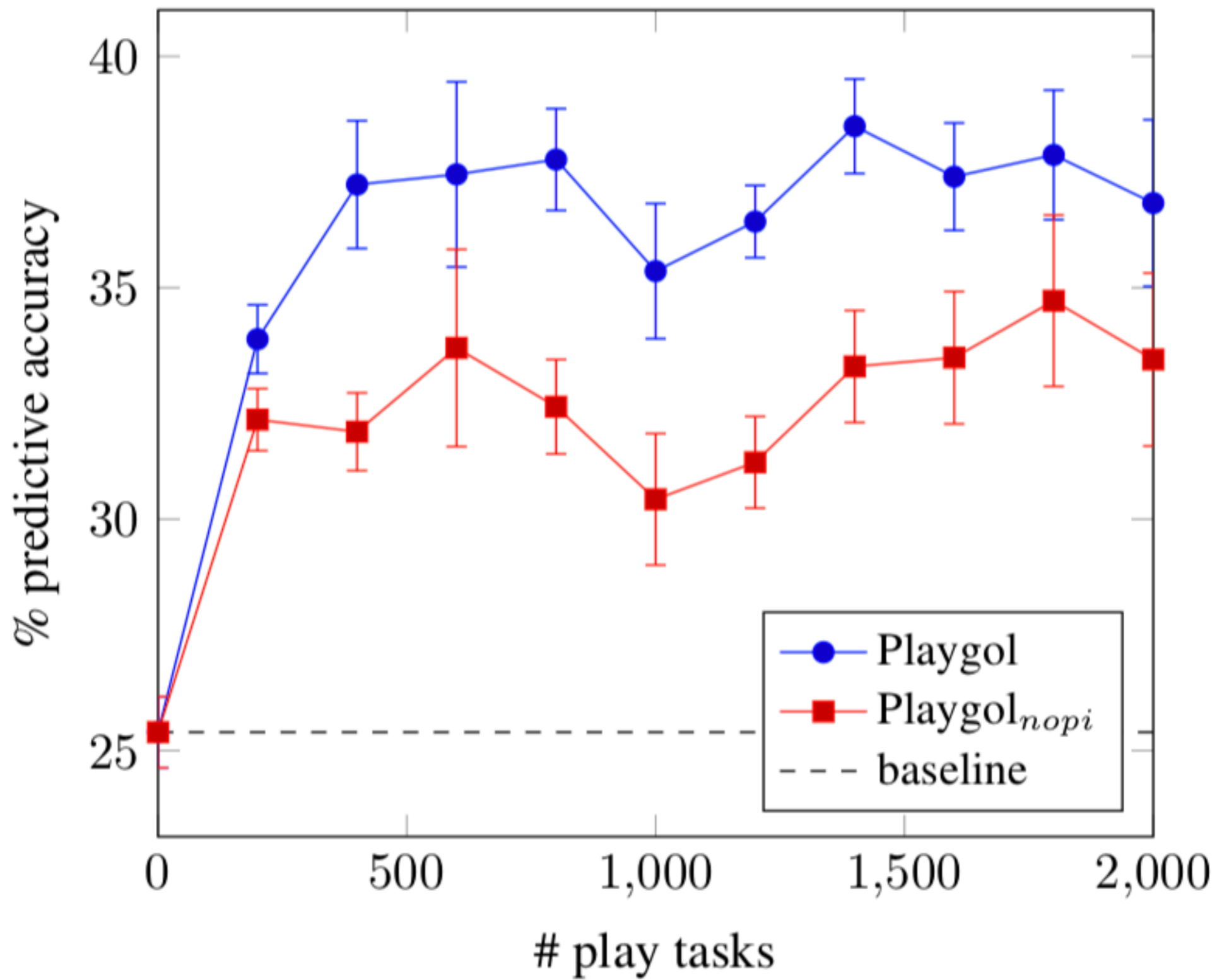
30 October, 1955 (63 years old)

OCT

2 November, 1954 (64 years old)

NOV

<b>Task</b>	<b>Input</b>	<b>Output</b>
play_9	.f\73\R)	F
play_52	@B4\X;3MjKdyZzC	B
play_136	9pfy'ktfbS1v	99PF
play_228	I6zihQk-	Q



```
build_95(A,B):-play_228(A,C),play_136_1(C,B).
play_228(A,B):-play_52(A,B),uppercase(B).
play_228(A,B):-skip1(A,C),play_228(C,B).
play_136_1(A,B):-play_9(A,C),mk_uppercase(C,B).
play_9(A,B):-skip1(A,C),mk_uppercase(C,B).
play_52(A,B):-skip1(A,C),copy1(C,B).
```

## Todo

1. Better sampling (based on novelty?)
2. Forgetting
3. When does it work?