



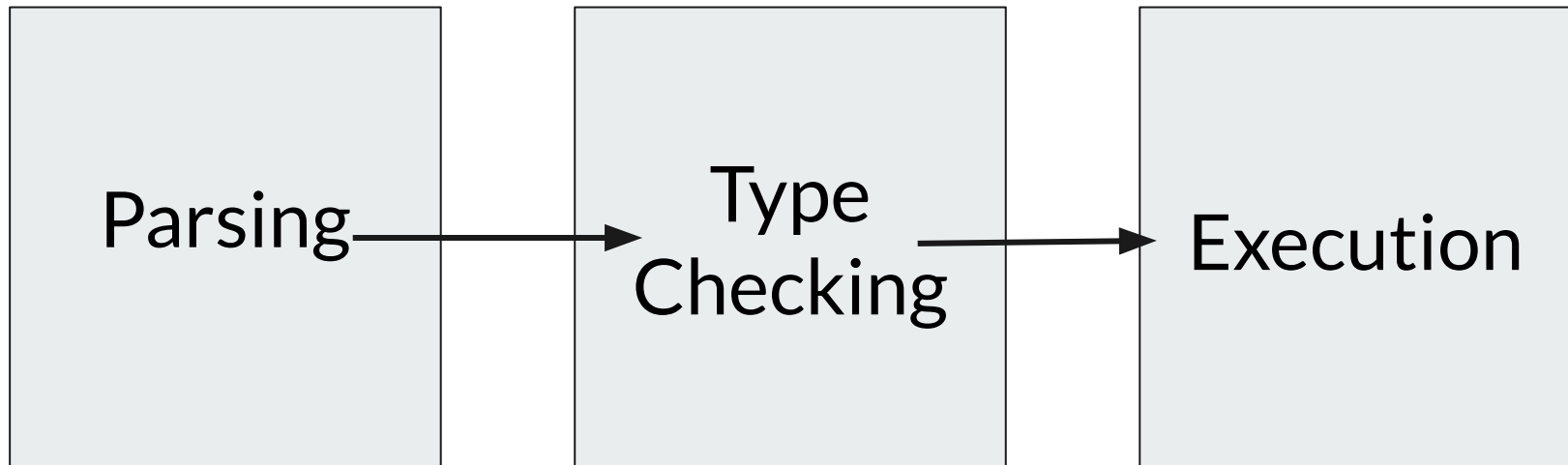
End-to-End Program Execution with CNNs

Dietrich Geisler, Not Skynet





Programs: A Review



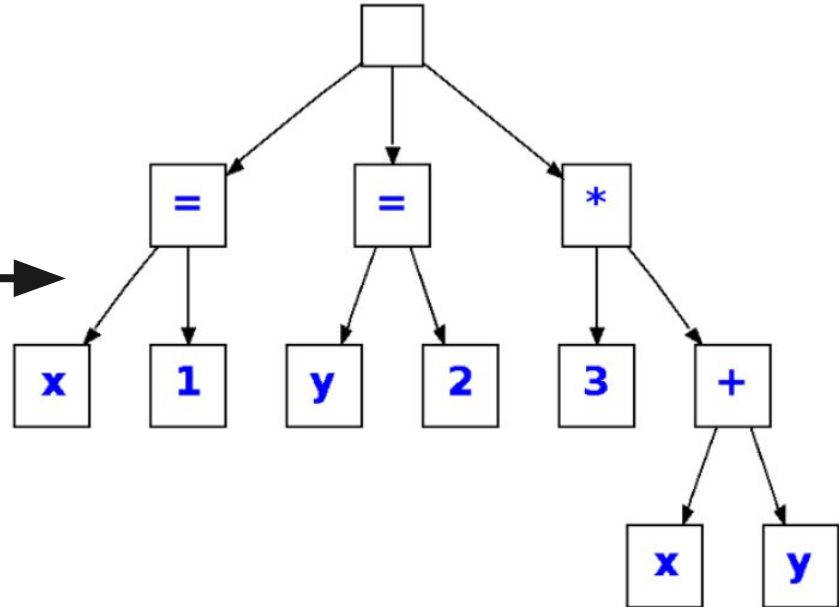


Neural Networks

[Insert stock explanation of what a neural networks is.
Probably involves lots of lines and circles, maybe some
pictures of numbers or robots or something]]]]]

Parsing

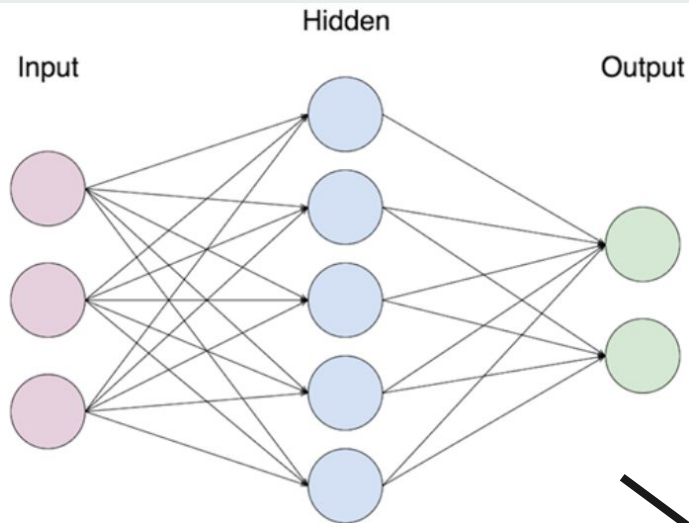
x = 1;
y = 2;
return 3 * (x + y);



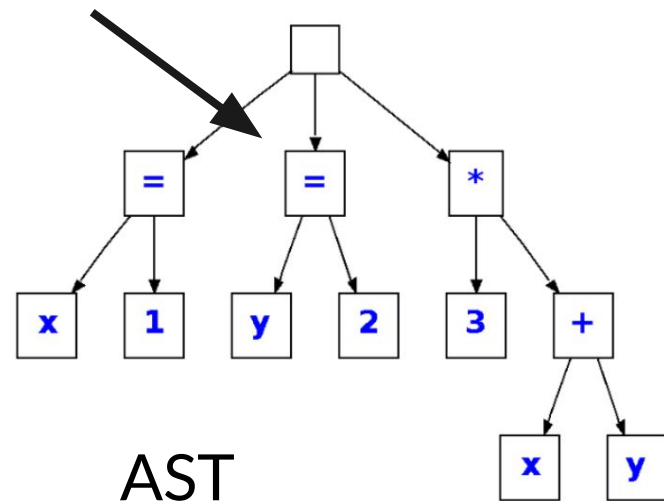
Parsing

```
x = 1;  
y = 2;  
return 3 * (x + y);
```

code.png



CNN



AST

Parsing code with your CNN





Type Checking

I heard this involves something called “safety” and “understanding what the code does”

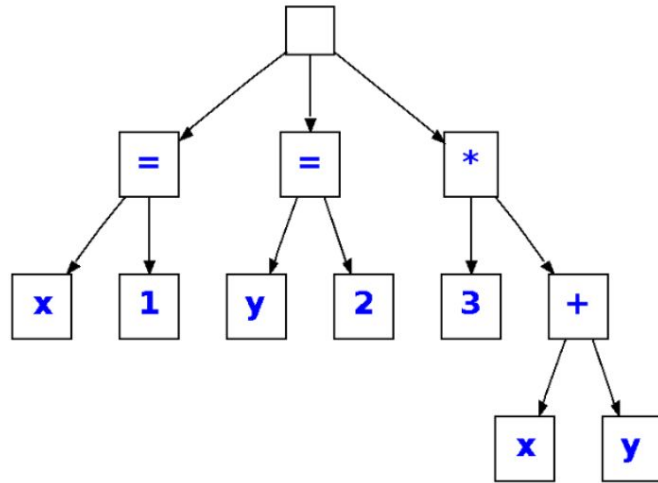
Fortunately, NNs don’t need either

Parsing code with your CNN

Who needs type checking?
We have neural networks



Operations



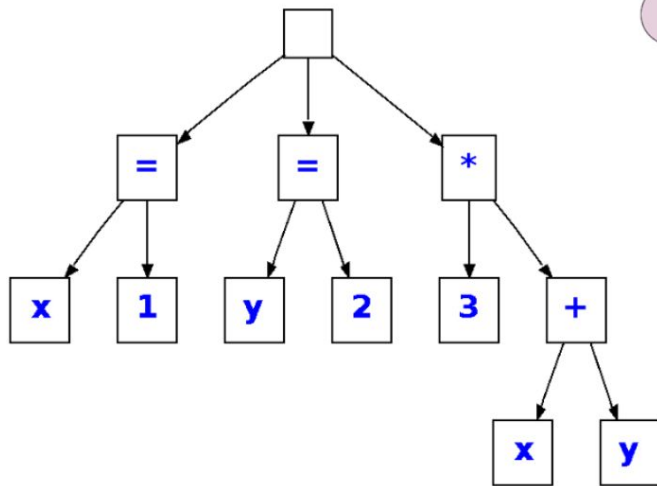
AST



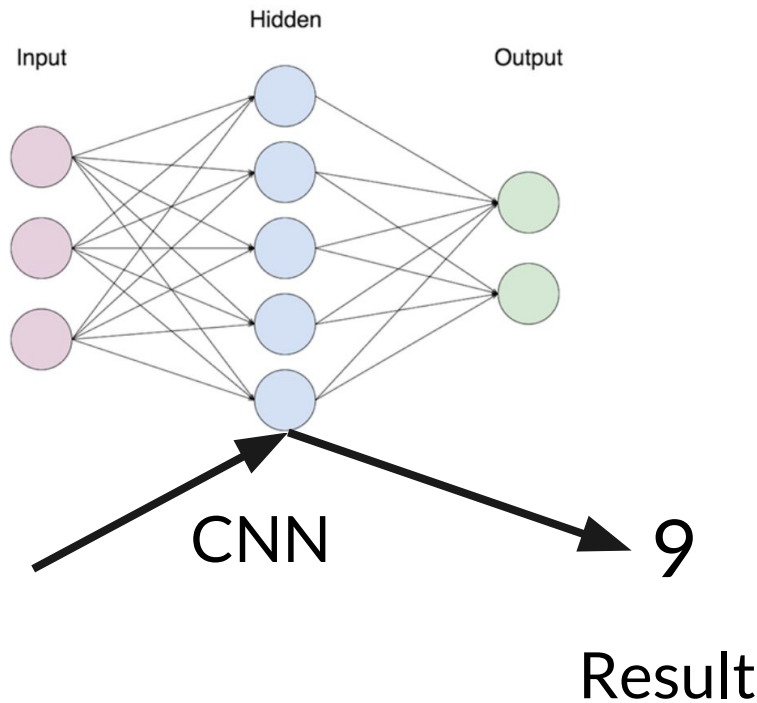
9

Result

Operations



AST.png



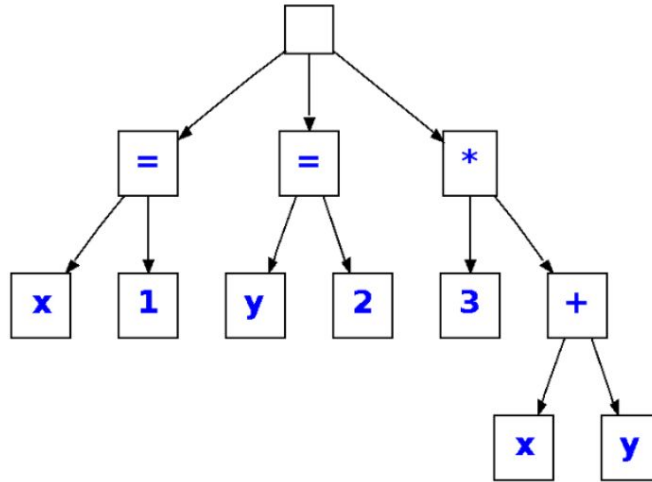
Parsing code with your CNN

Who needs type checking?
We have neural networks

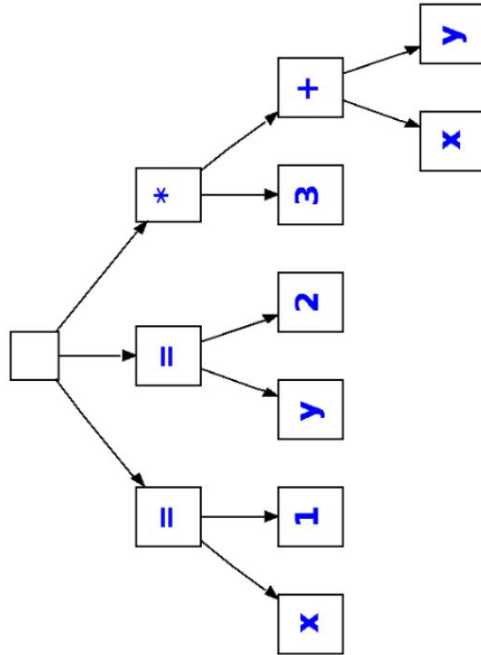
AST nodes as a neural network



That AST sorta looks like a Neural Network

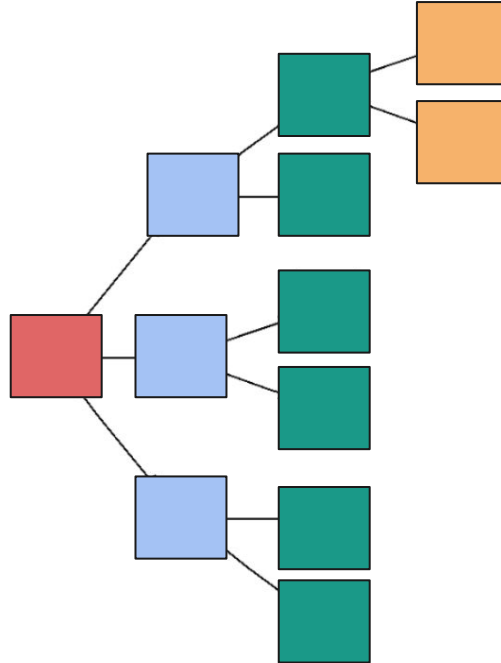


That AST sorta looks like a Neural Network





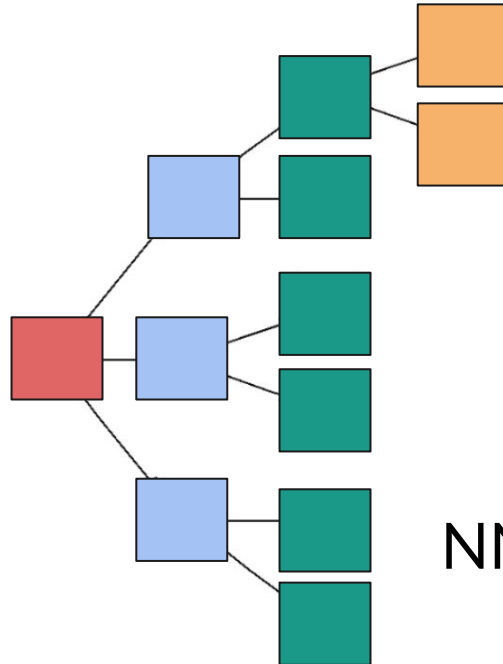
That AST sorta looks like a Neural Network



That AST sorta looks like a Neural Network

```
x = 1;  
y = 2;  
return 3 * (x + y);
```

code.png



→ 9
Result

Parsing code with your CNN

Who needs type checking?
We have neural networks

AST nodes as a neural network

Just let deep learning
solve everything





Codebase

```
import deep_learning
```

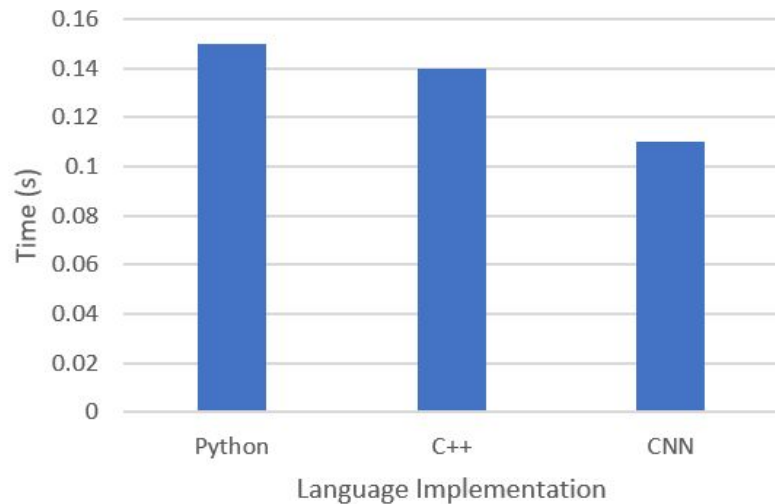
```
def run(input):
```

```
    print deep_learning.nn(input)|
```

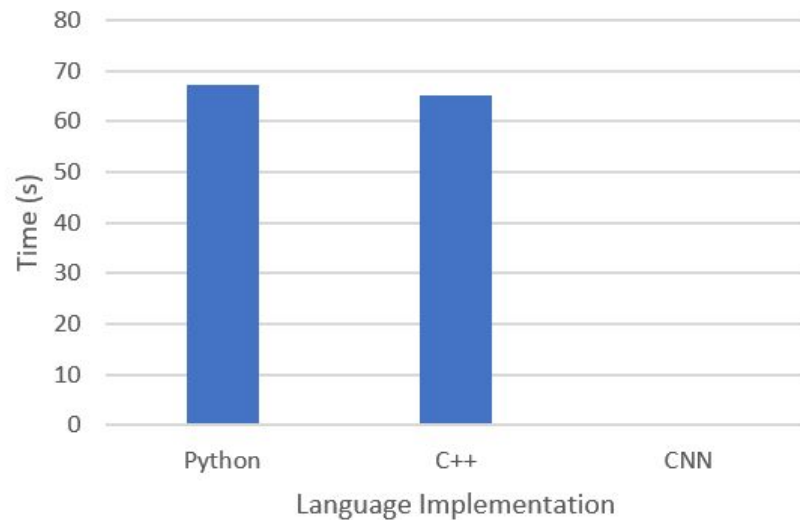


Results

Simple Loop



Matrix-Matrix Multiplication





Questions

...will be directed to our QNN