C++ vs Haskell vs BQN

Conor Hoekstra

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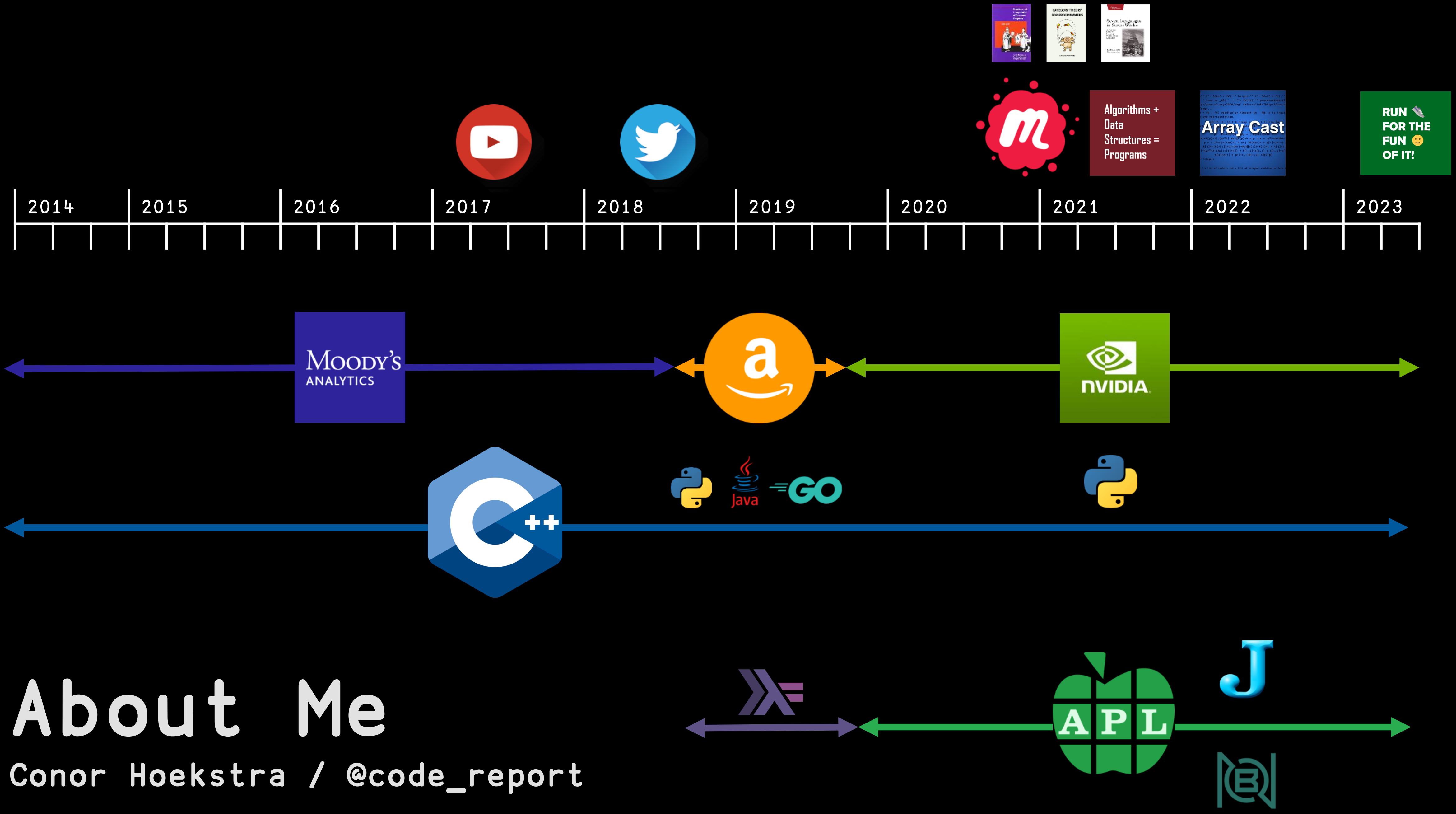

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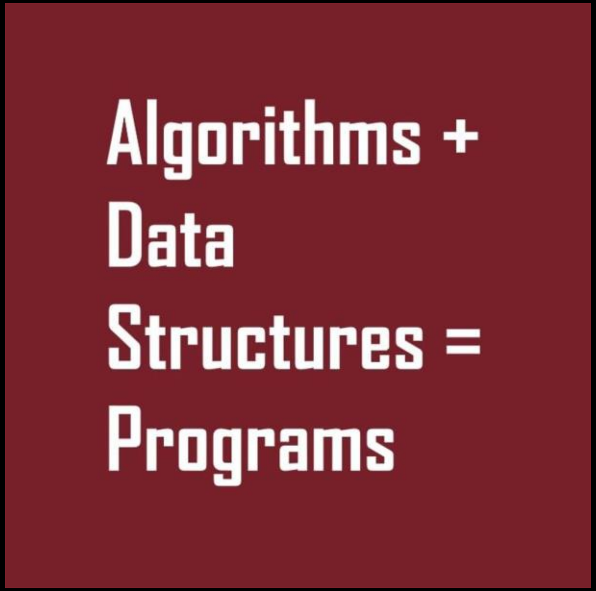

136 Episodes
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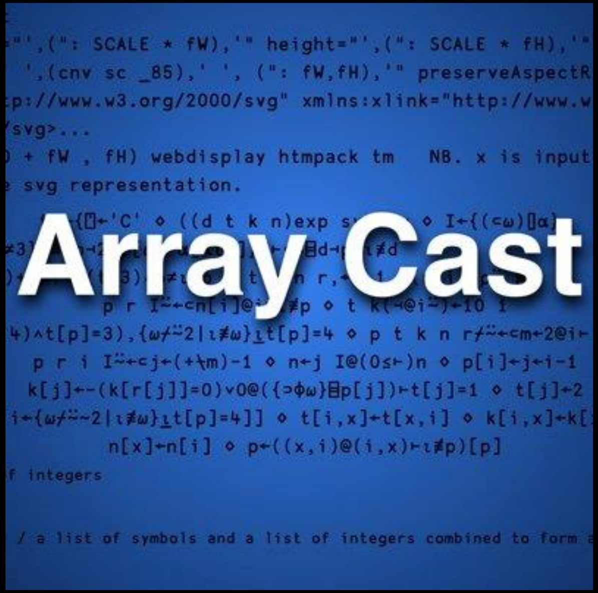

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```
[1, 2, 3, 4, 5]
```

```
[1, 3, 5]
```

C++14 Function Deduced Return Type

```
auto filter_odds(std::vector<int> nums) {
    auto odds = std::vector<int>{};
    for (auto const num : nums)
        if (num % 2 == 1)
        odds.push_back(num);
    return odds;
}
```

C++11 auto

C++11 range-based for

```cpp
auto filter_odds(std::vector<int> nums) {
    auto odds = std::vector<int>{};
    std::copy_if(
        nums.begin(), nums.end(),
        std::back_inserter(odds),
        [](auto e) { return e % 2 == 1; });
    return odds;
}
```

C++11 lambda

```cpp
auto filter_odds(std::vector<int> nums) {
    auto odds = std::vector<int>{};
    std::copy_if(
        nums.begin(), nums.end(),
        std::back_inserter(odds),
        [](auto e) { return e % 2 == 1; });
    return odds;
}
```

C++14 generic lambda

```cpp
auto filter_odds(std::vector<int> nums) {
    auto odds = std::vector<int>{};
    std::ranges::copy_if(
        nums, std::back_inserter(odds),
        [](auto e) { return e % 2 == 1; });
    return odds;
}
```

C++20 range overload

```cpp
auto filter_odds(std::vector<int> nums) {
  return nums
       | std::views::filter(
           [](auto e) { return e % 2 == 1; });
}
```

C++20 Ranges

```haskell
filterOdd xs = filter (\e -> mod e 2 == 1) xs
filterOdd xs = filter odd xs
filterOdd = filter odd
```

```
filter odd
```

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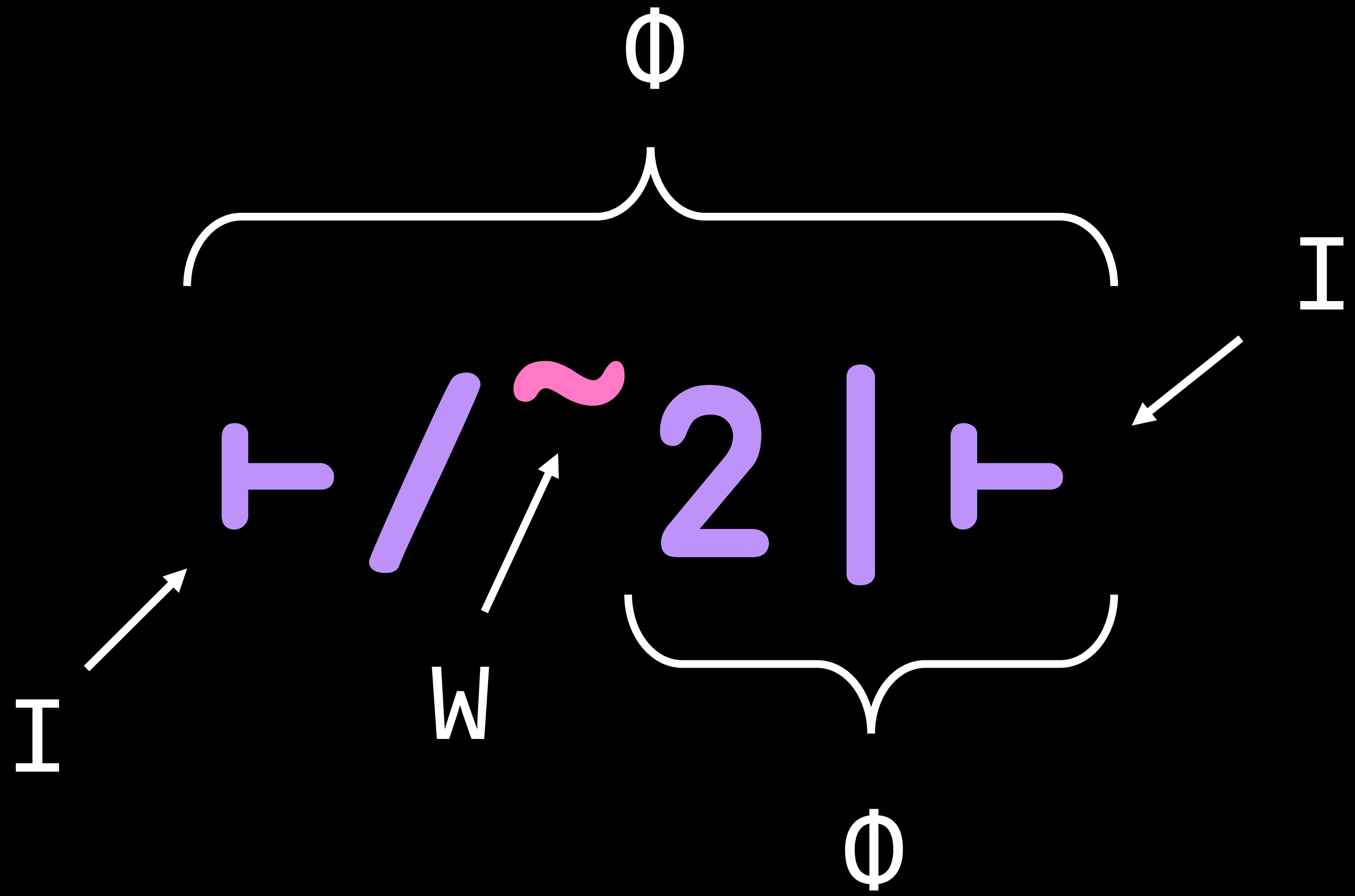
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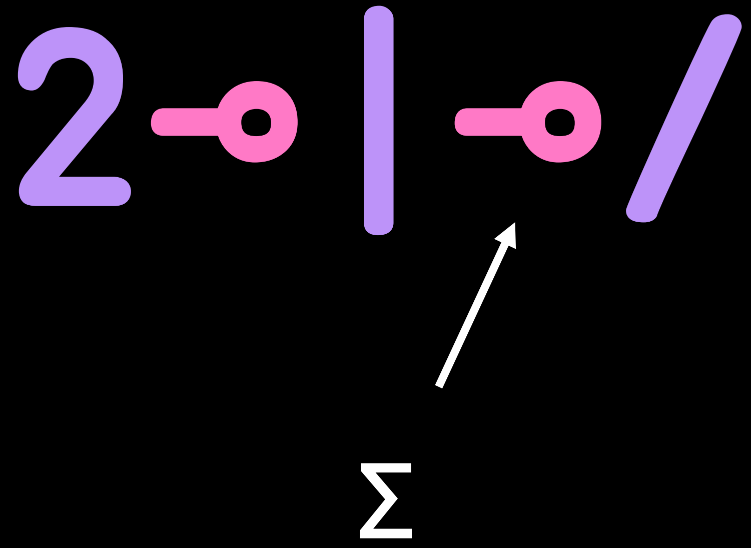
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combinatorylogic.com
bqnpad.mechanize.systems
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Thank You

https://github.com/codereport/Content/Talks

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