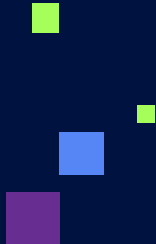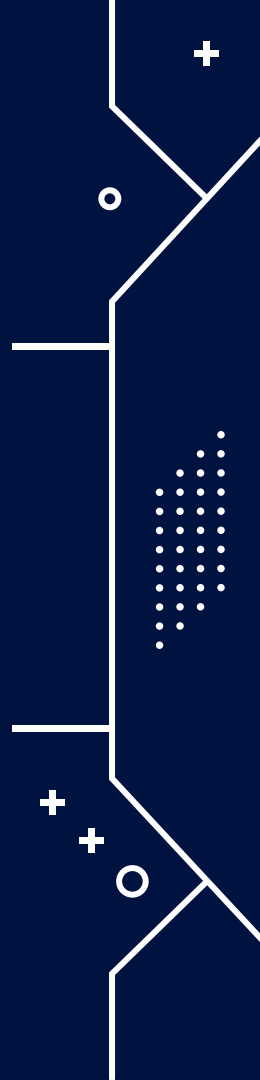# Maintaining Builds at Scale

Speakers

Sam Snyder

Vice President Of Engineering at Moderne, Inc

- First adopted Gradle at version 2.14
- Former Gradle Developer Advocate

in sambsnyder

 sambsnyd

Brian Demers

Developer Advocate at Gradle, Inc

- Beekeeper
- Maven Fan!
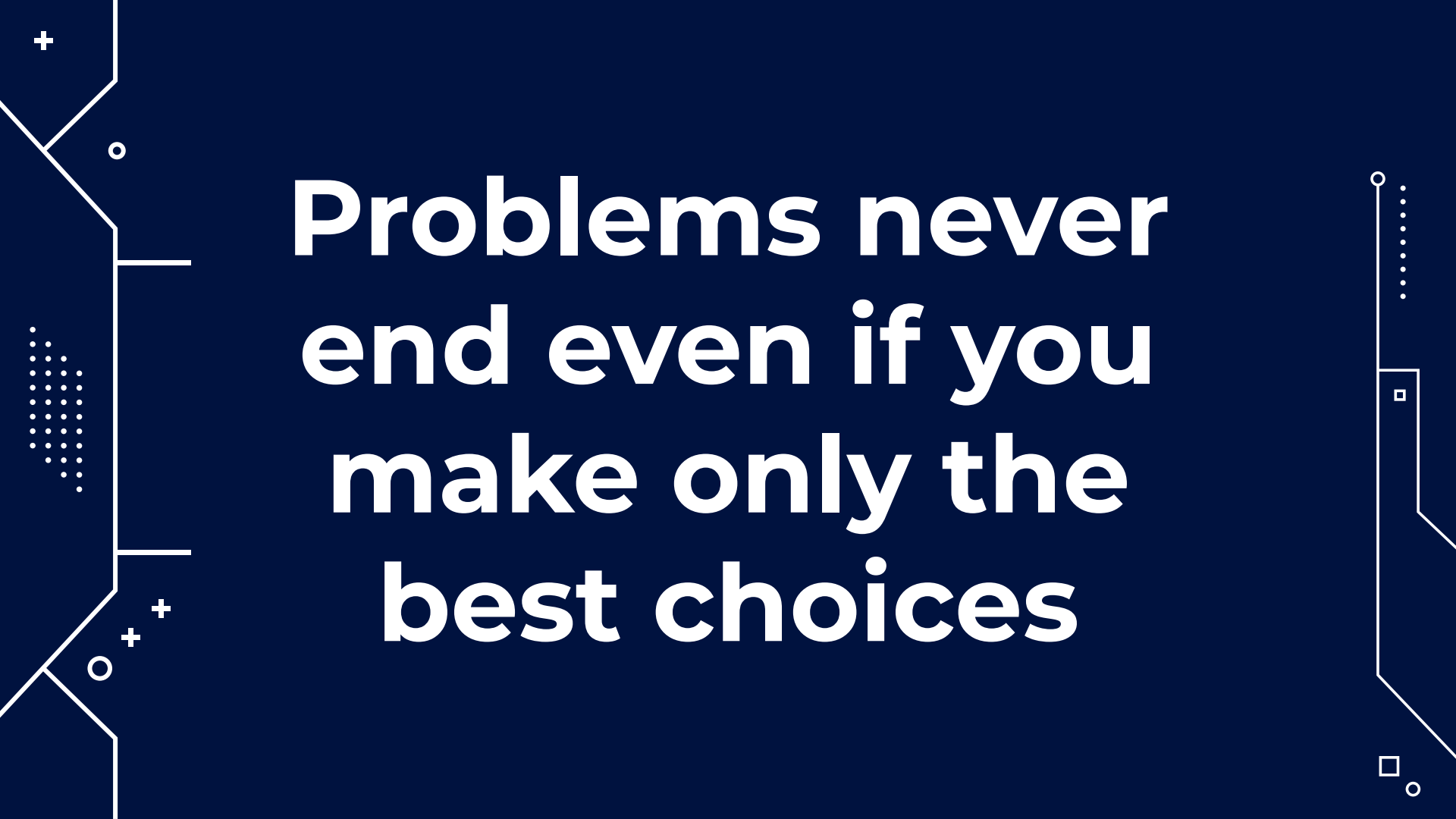
in bdemers

 bdemers

Topics

- **The problems with scale**

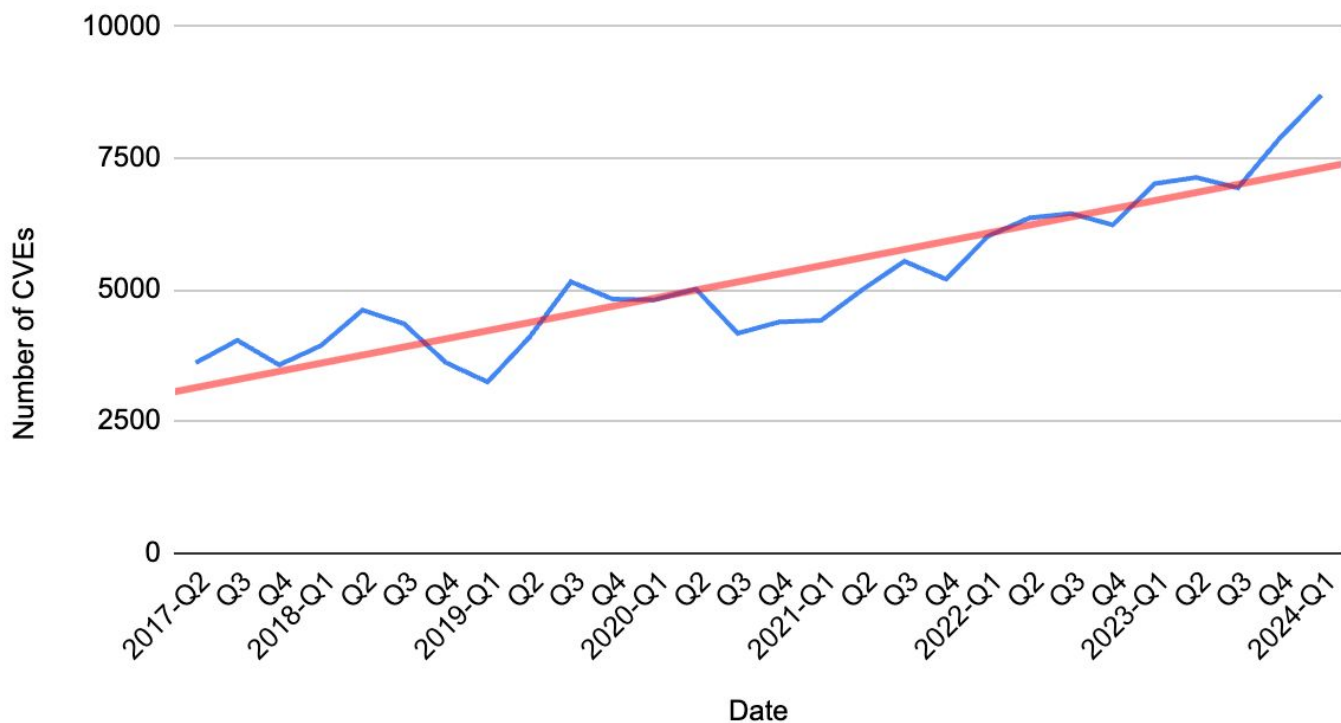- **Managing your software supply chain**

- **What is OpenRewrite**

- **Demos!**

+ + +

Problems never end even if you make only the best choices

Number of CVEs / Quarter

Just use a bot!

Dependabot is great

Easy to run into limitations

Falls short when code changes are needed

Update to JUnit 5, Spring Boot 2 to 3

What about dead libraries?

Move from Javax to Jakarta

What is OpenRewrite

OpenRewrite

- **Open source (Apache 2)**

- **Parsers turn source into LSTs**

- **Recipes manipulate LSTs to effect change**

- **Maven and Gradle plugins**
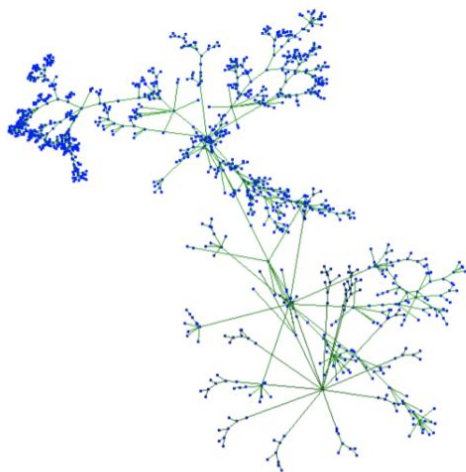
Structured representation facilitates transformation
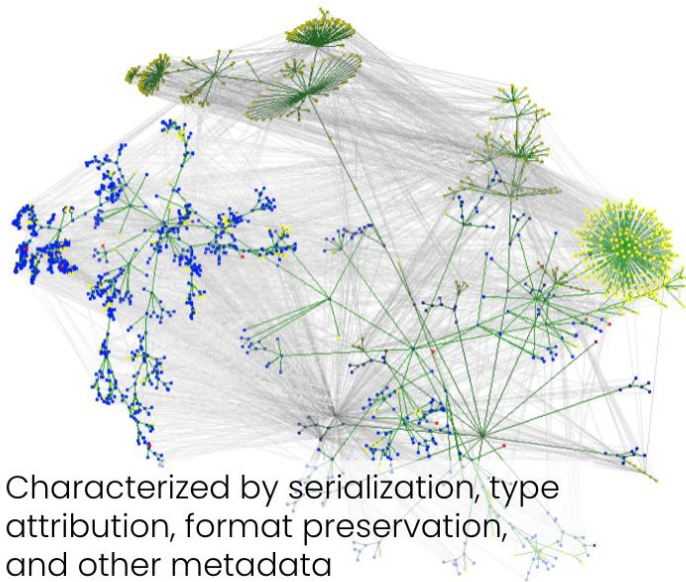

Text-based search

```
void m() {
    if(c > 2) {
        x = c;
    }
    while(c < 10) {
        x += p();
        c++;
    }
}
```

Abstract Syntax Tree (AST)

Lossless Semantic Tree (LST)

Characterized by serialization, type attribution, format preservation, and other metadata

+ another 600,000 nodes that didn't fit in this graphic

Recipes

- **Preserve style & formatting**

- **Operate on both code and data**

- **Type-attributed LSTs allow high accuracy**
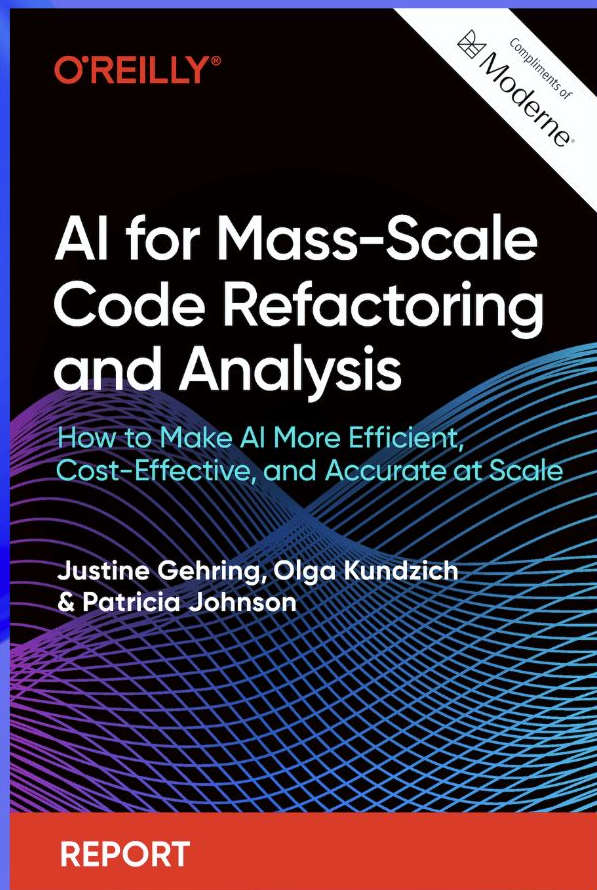
- **Transform, search, extract data**

+ + +

Demos

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Compliments of
Moderne

AI for Mass-Scale Code Refactoring and Analysis

How to Make AI More Efficient,
Cost-Effective, and Accurate at Scale

Justine Gehring, Olga Kundzich
& Patricia Johnson

REPORT

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Thank you!

Questions?