

A background image of soccer players on a green field. One player in the foreground is wearing a red jersey with 'Adidas' and 'PRODAQ' logos, and is about to kick a soccer ball. Other players in red jerseys are visible in the background.

**ANR Project
2015–2019**

PRODAQ

Proof Systems for Data Queries

Kick-off Meeting

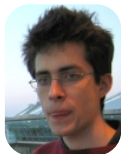
November 2nd, 2014

CONSORTIUM

Partner Laboratoire Spécification et Vérification
École Normale Supérieure de Cachan



Participants David Baelde & Sylvain Schmitz &
PhD student



GENERAL CONTEXT

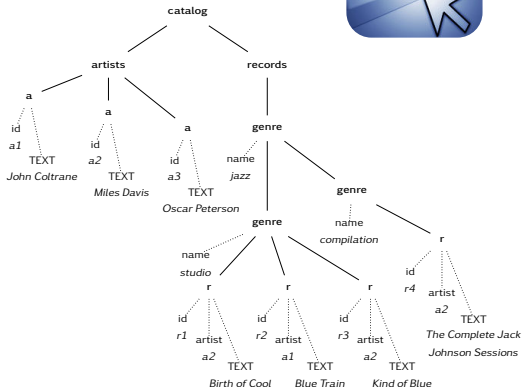
- ▶ XML format
- ▶ data trees
- ▶ XPath queries
- ▶ Satisfiability



```
<catalog>
  <artists>
    <a id="a1">John Coltrane</a>
    <a id="a2">Miles Davis</a>
    <a id="a3">Oscar Peterson</a>
  </artists>
  <records>
    <genre name="jazz">
      <genre name="studio">
        <r id="r1" artist="a2">Birth of Cool</r>
        <r id="r2" artist="a1">Blue Train</r>
        <r id="r3" artist="a2">Kind of Blue</r>
      </genre>
      <genre name="compilation">
        <r id="r4" artist="a2">The Complete Jack
          Johnson Sessions</r>
      </genre>
    </genre>
  </records>
</catalog>
```

GENERAL CONTEXT

- ▶ XML format
- ▶ data trees
- ▶ XPath queries
- ▶ Satisfiability



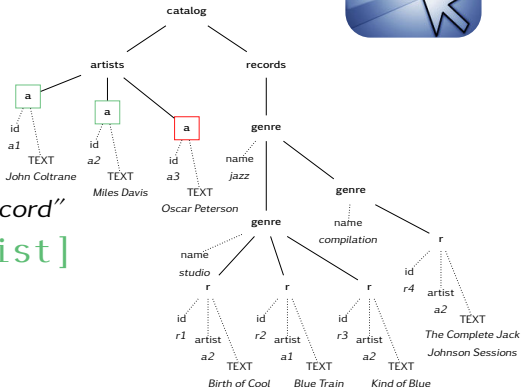
GENERAL CONTEXT

- ▶ XML format
- ▶ data trees
- ▶ XPath queries

“artists with at least one record”

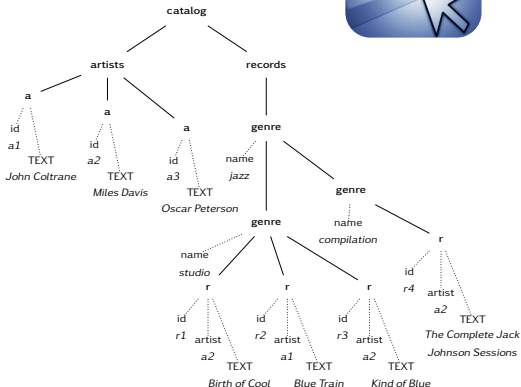
`//a[@id=//r/@artist]`

- ▶ Satisfiability

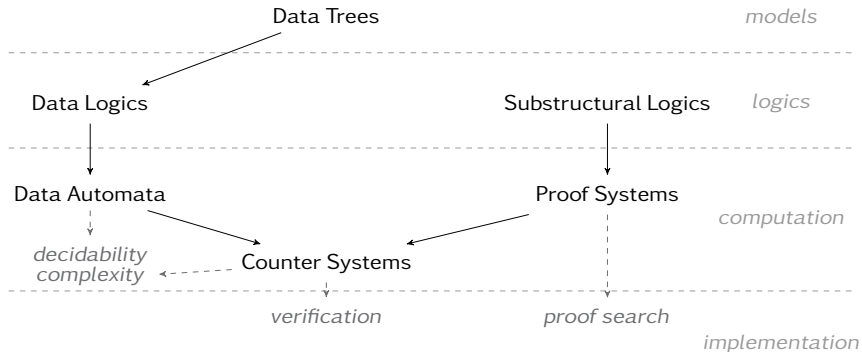


GENERAL CONTEXT

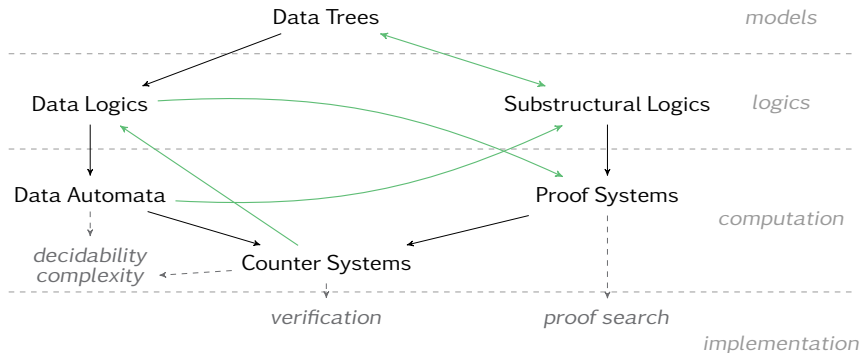
- ▶ XML format
- ▶ data trees
- ▶ XPath queries
- ▶ Satisfiability
 - ▶ optimization
 - ▶ verification



OBJECTIVES: BRIDGES AND TOOLS



OBJECTIVES: BRIDGES AND TOOLS



OBJECTIVES: BRIDGES AND TOOLS

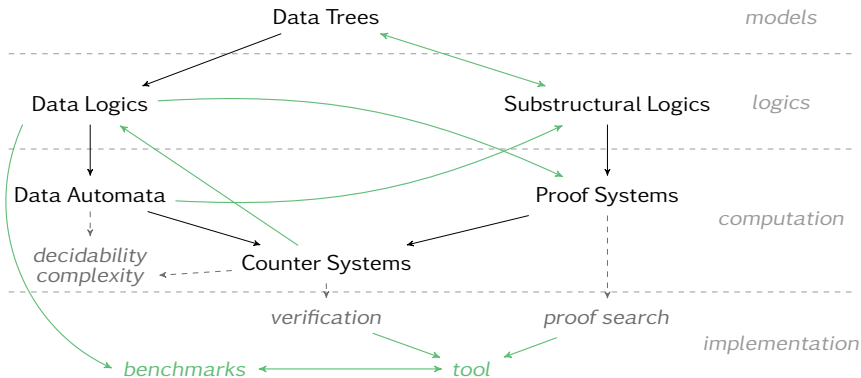


IMAGE CREDITS

- ▶ [Fulham v WBA](#) CC BY 2.0, by Nick
- ▶ [Internet1](#) CC BY-SA 3.0, by Rock1997