



Data Science Center Eindhoven

Context-Aware Predictive Web Analytics (CAPA)

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In the CAPA project we study how to integrate context-awareness and change detection into predictive web analytics aiming to improve user experience in search, personalized information access on the Web. This four-year project is funded by STW and co-funded by Adversitement B.V.

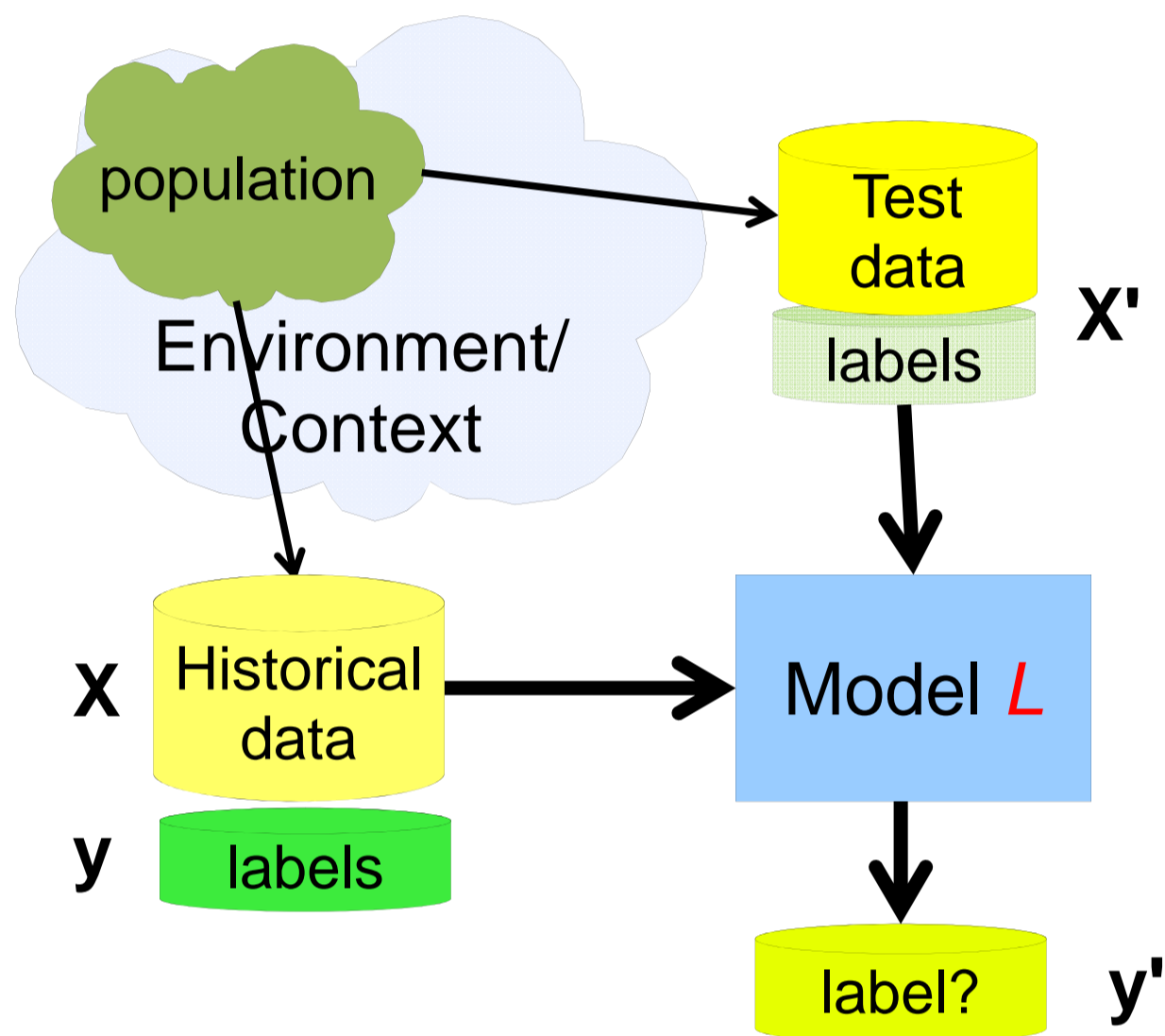


What is Predictive Web Analytics?

- Recognizing, profiling, predicting and guiding user(s) behavior on a web portal or a publisher's website.

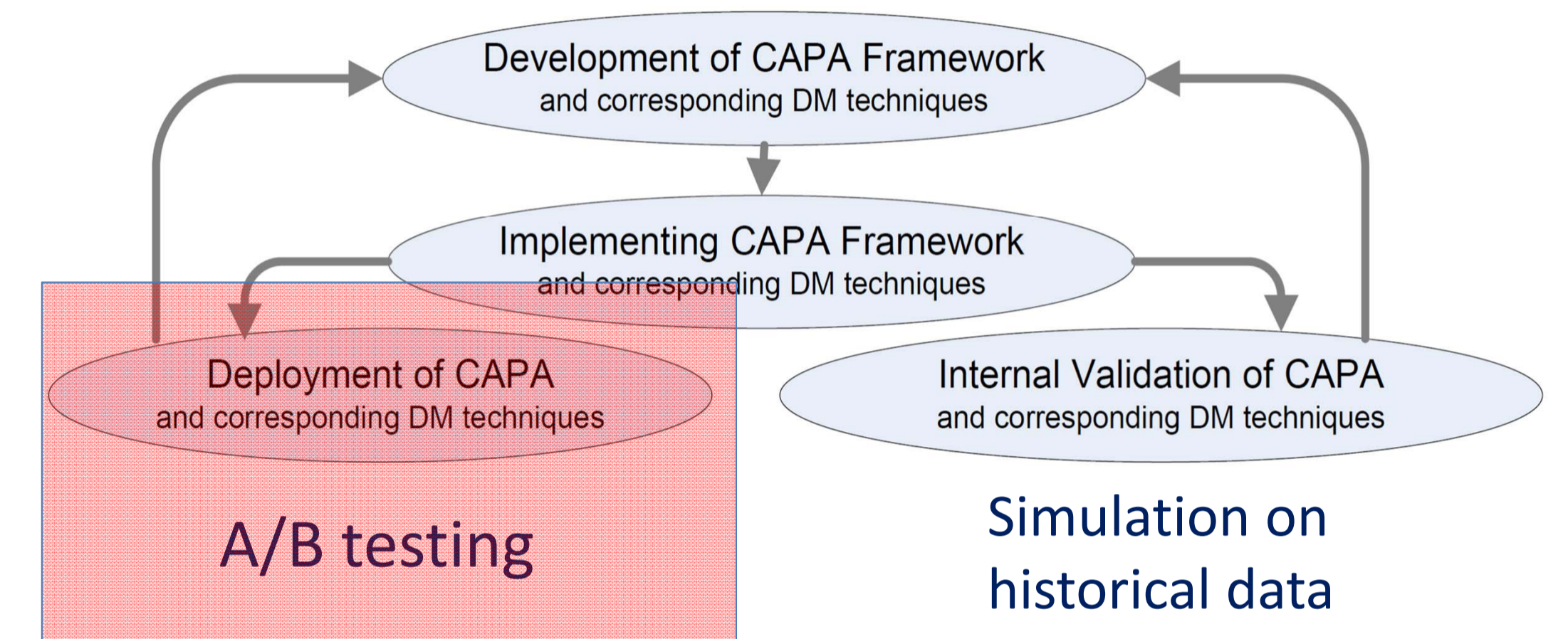
What is Context?

- any additional information that enhances the understanding of the instance of interest and helps us to classify this instance or makes predictions regarding its behavior.

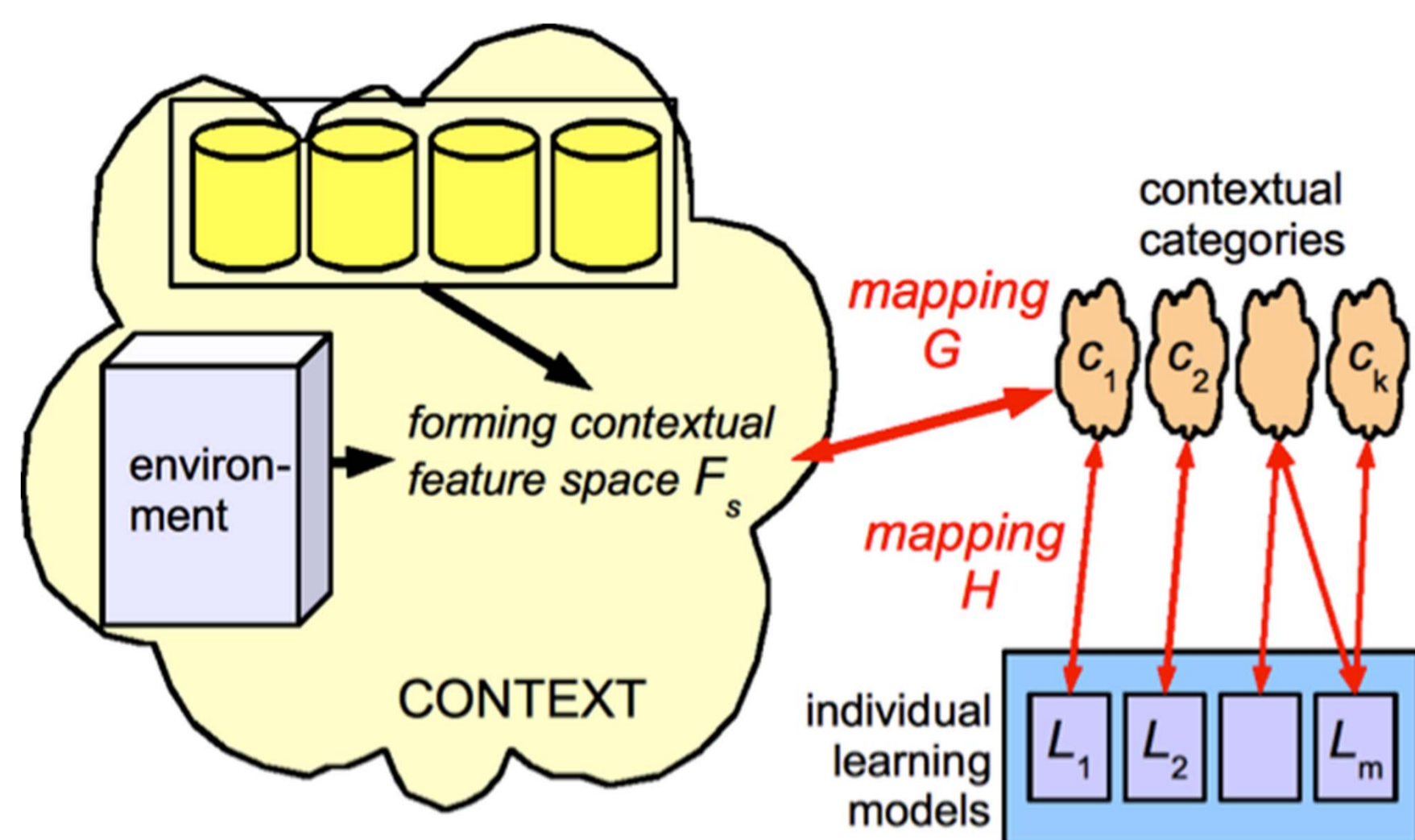


Applications

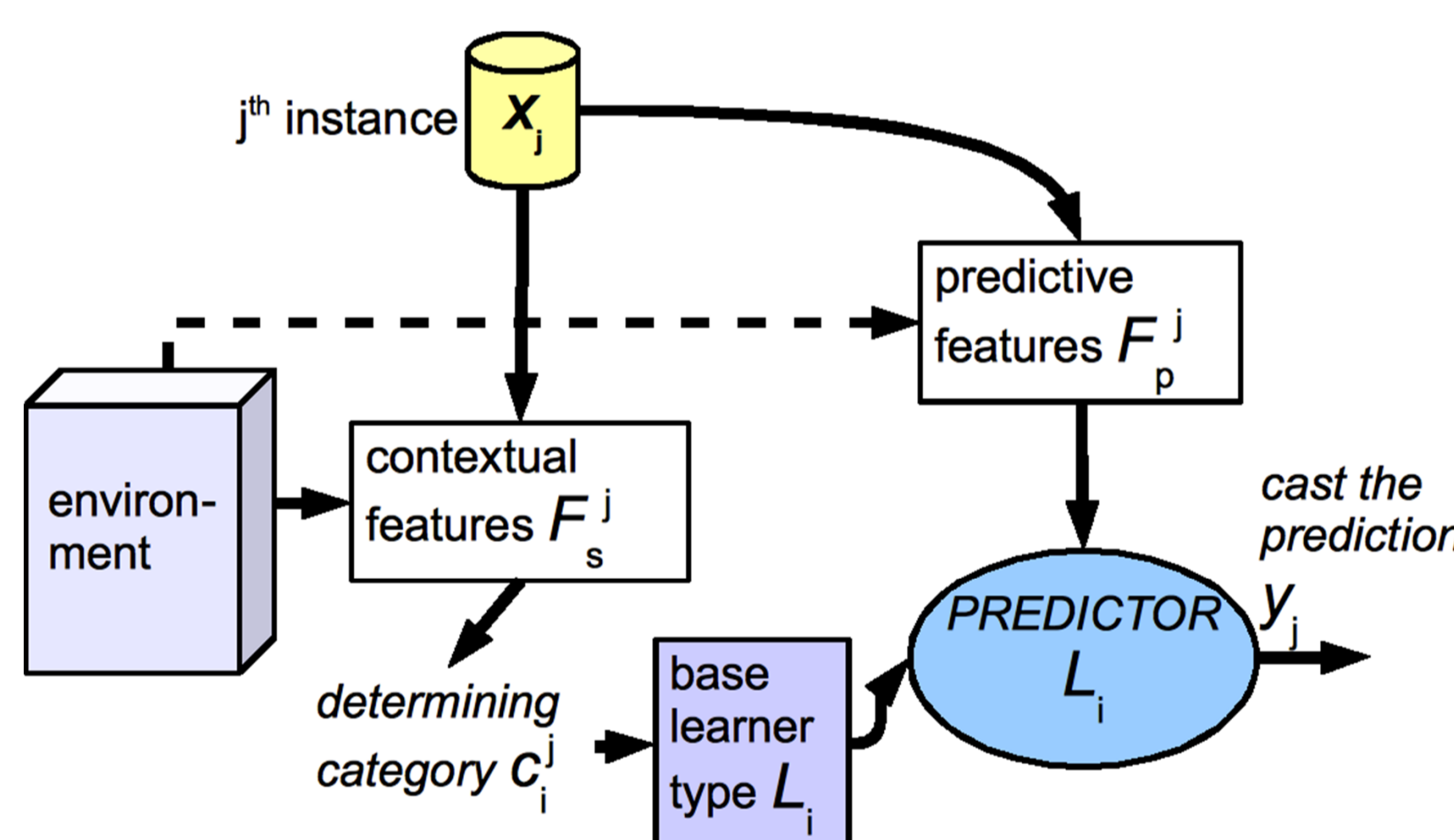
- Personalized search
- Recommendations
- Contextual advertising
- Targeted marketing
- User profiling
- Demand prediction



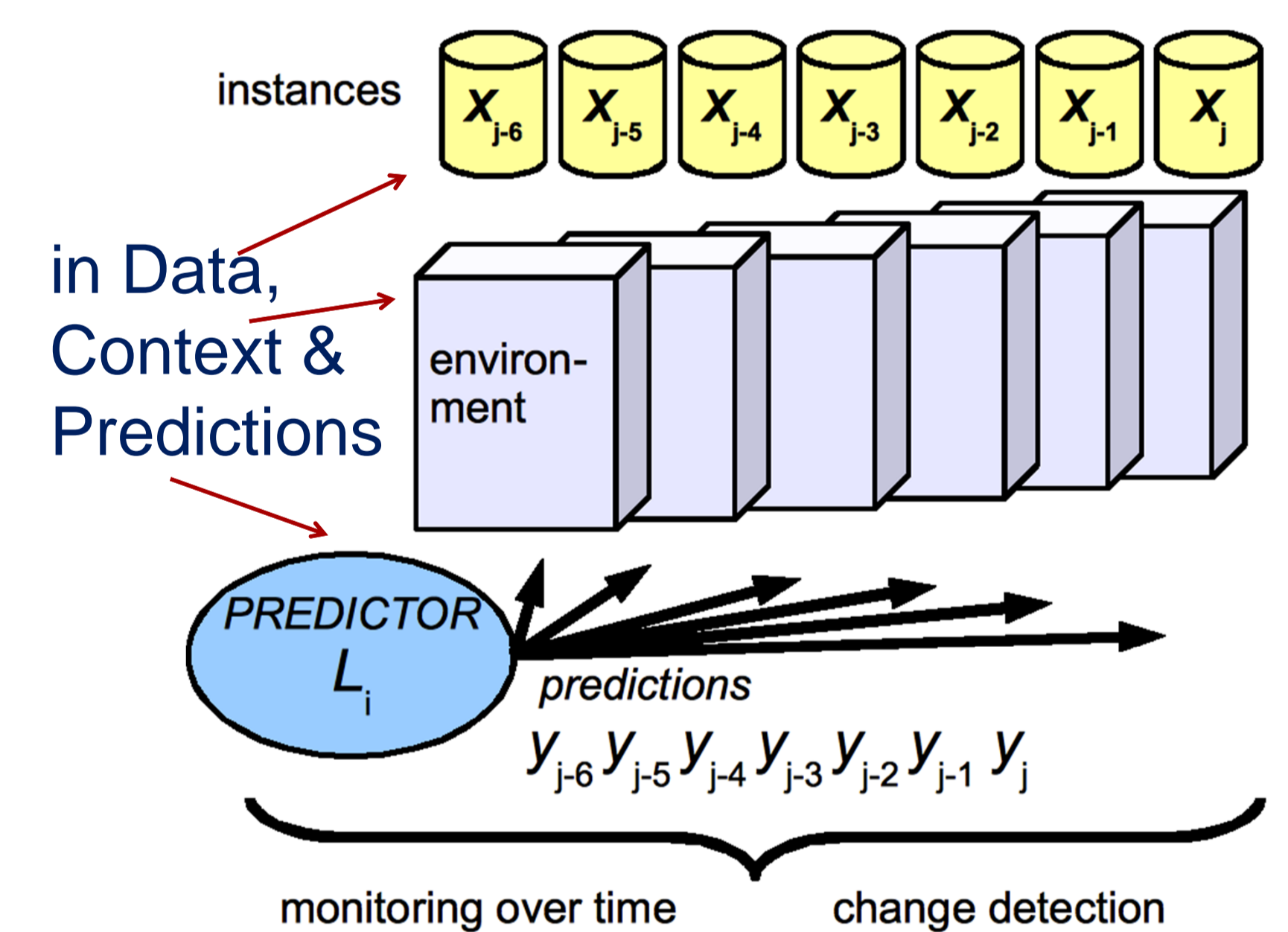
Context Discovery & Integration



Casting Context-Aware Prediction

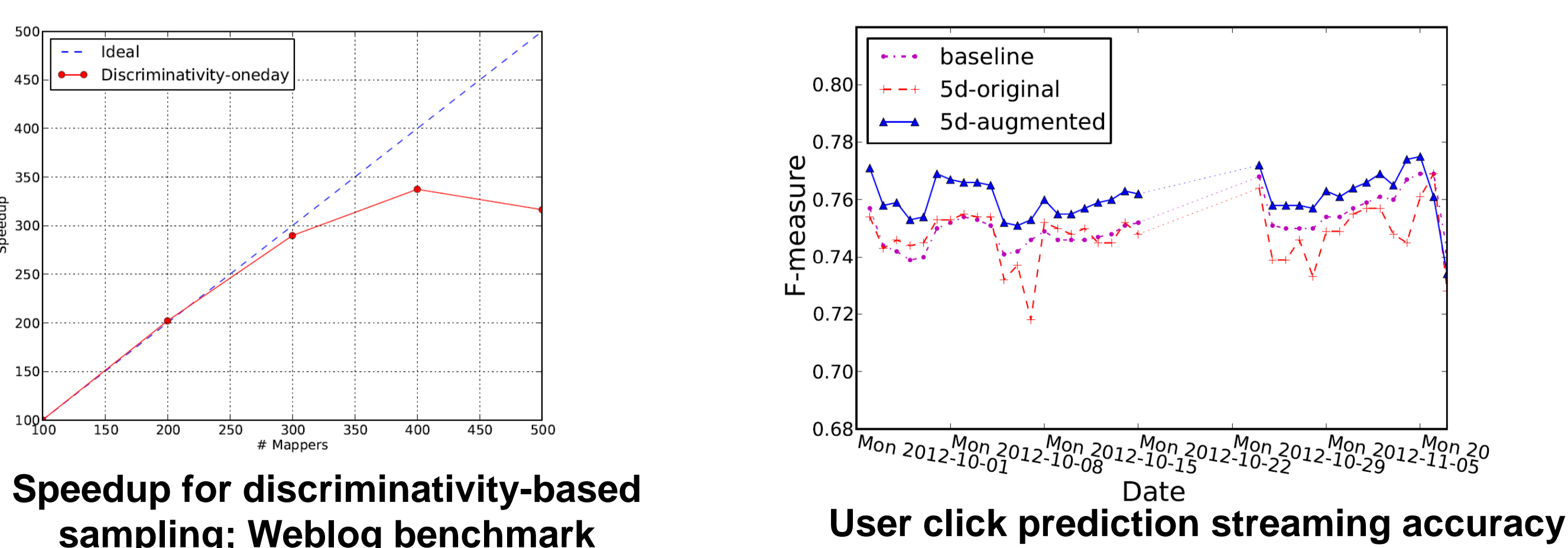
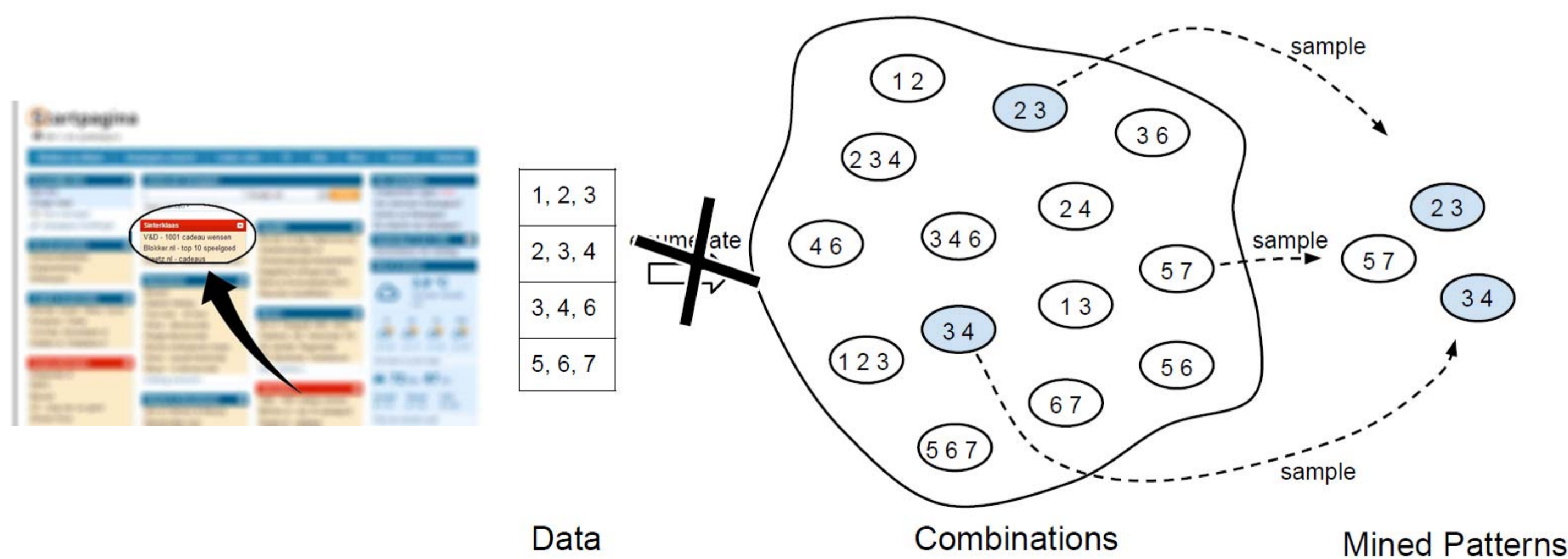


Monitoring for Changes



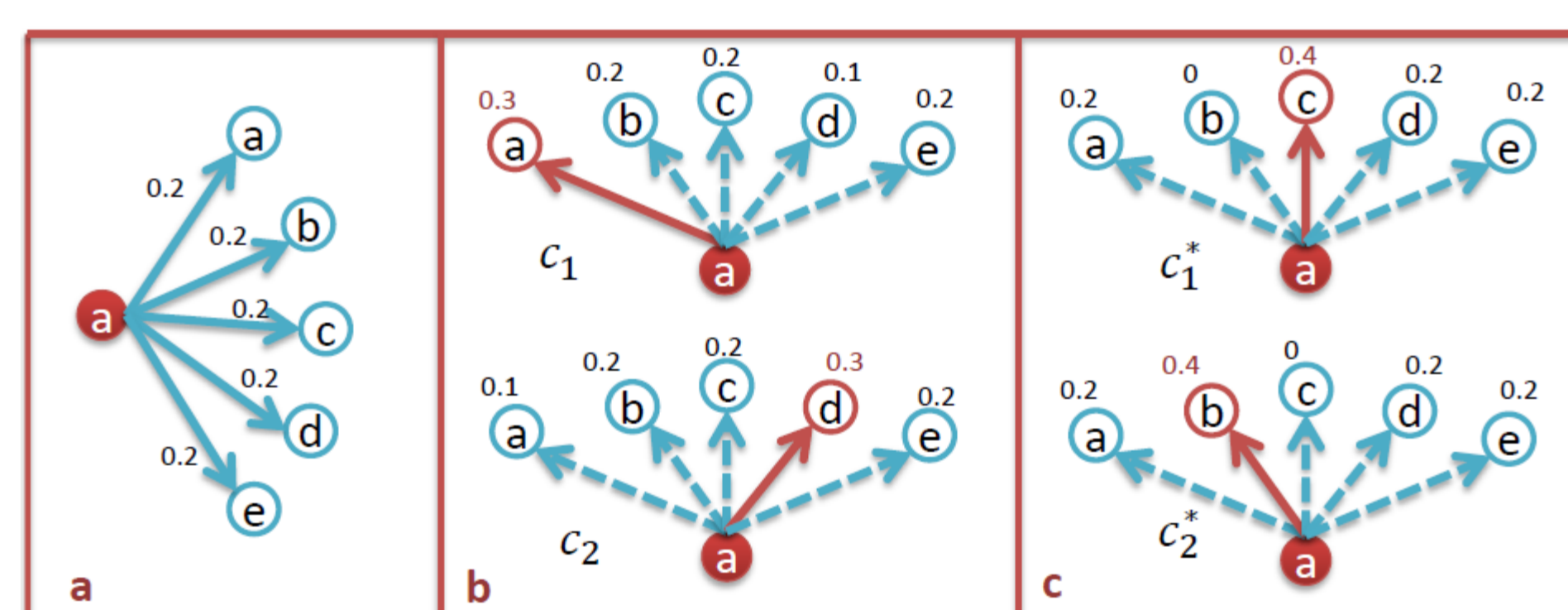
Dealing with Big Data Challenges

- Distributed context discovery for predictive modeling
- Pattern sampling with MapReduce

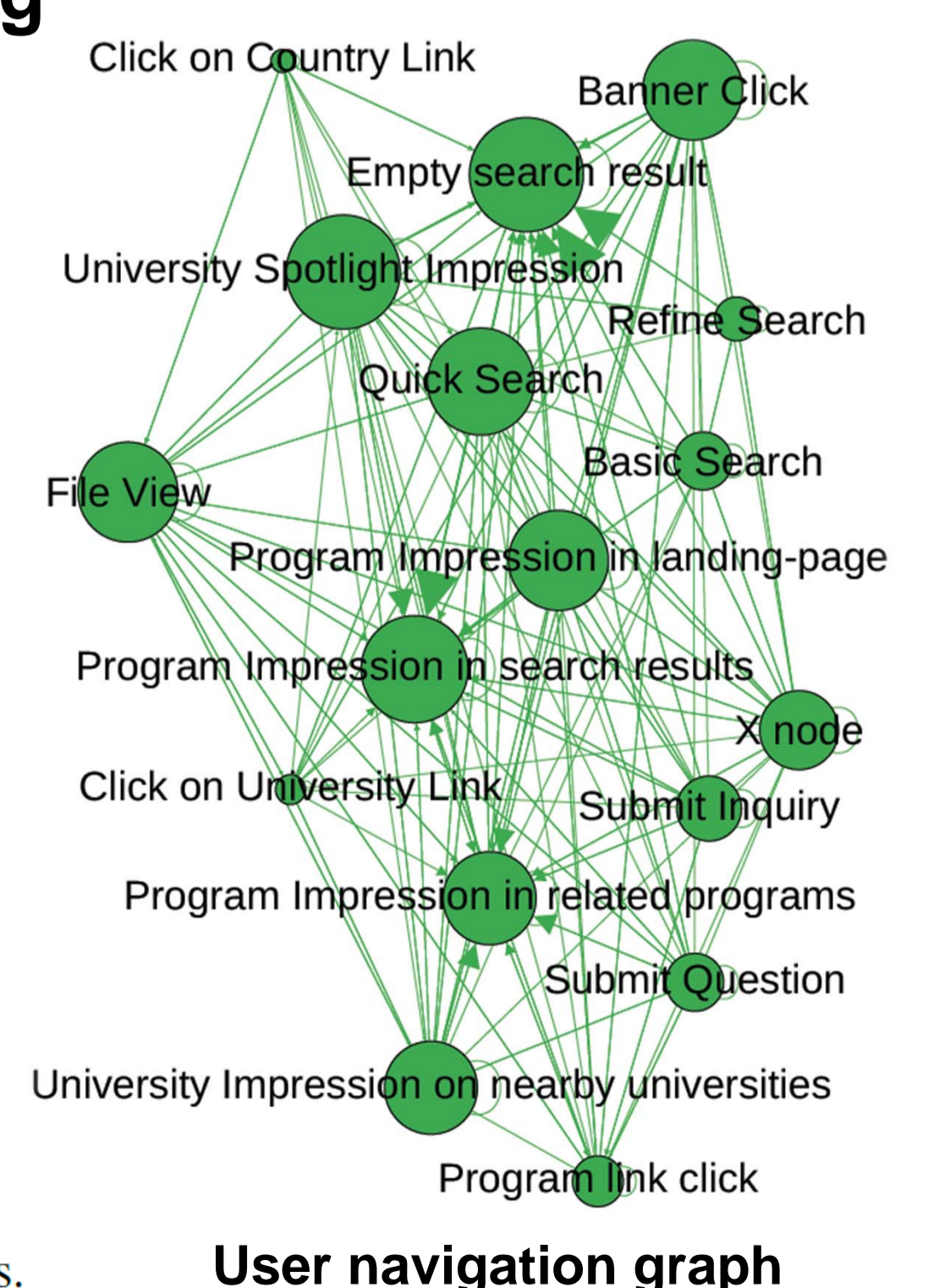


On-going Subprojects and Case Studies

- Location-based ranking adjustment
- Exceptional context mining
- Identifying, quantifying and removing biases for predictive modelling in computational (display) advertising
- Unified management of RTB and guaranteed advertising



Two contexts $C = \{c_1, c_2\}$ and $C^* = \{c_1^*, c_2^*\}$ have different transition distributions.



User navigation graph