

# Can we use data from process-aware information systems to keep resource profiles up-to-date?

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# Contents

- Problem (PHD topic)
- Progress
- Current research
- Conclusion

**PROBLEM**

What do they know?



# Do you know who knows?

- Always changing
- Manual updates

# Knowledge Management challenges

- The creation of a knowledge map
- Team selection
- Brain drain

# Resource profiles



**PHD TOPIC**

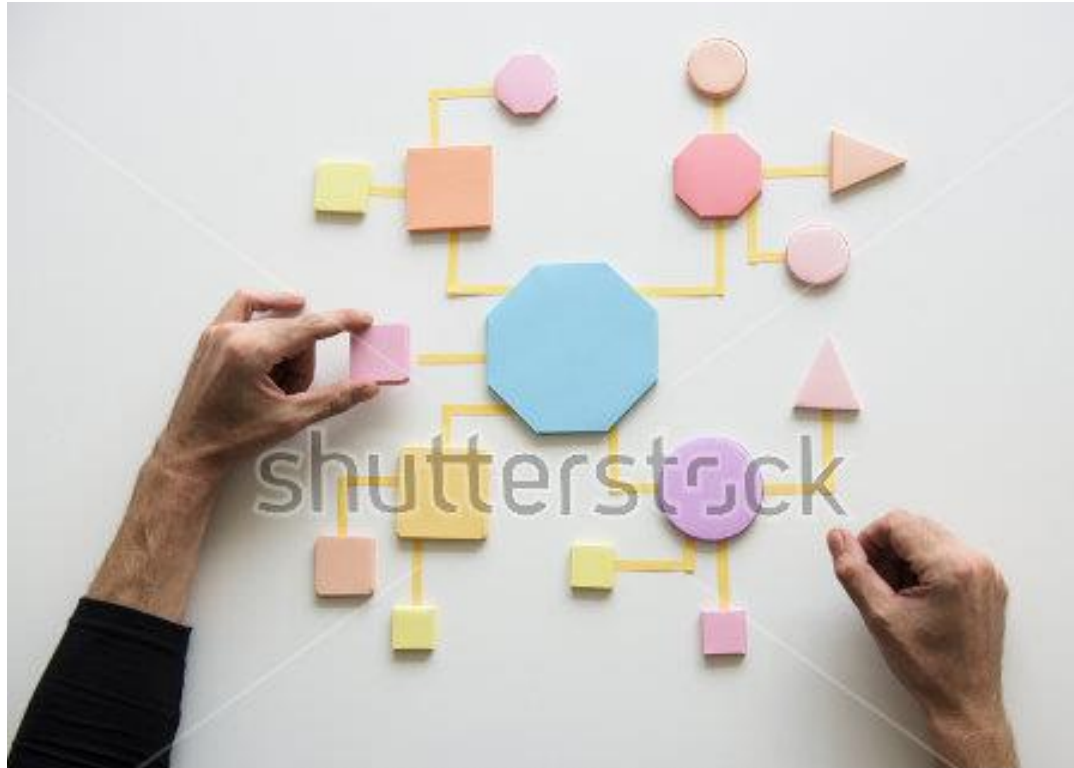


# Main Topic

Adding a knowledge management perspective to process aware information systems.

**PROGRESS**

# Current focus of process mining



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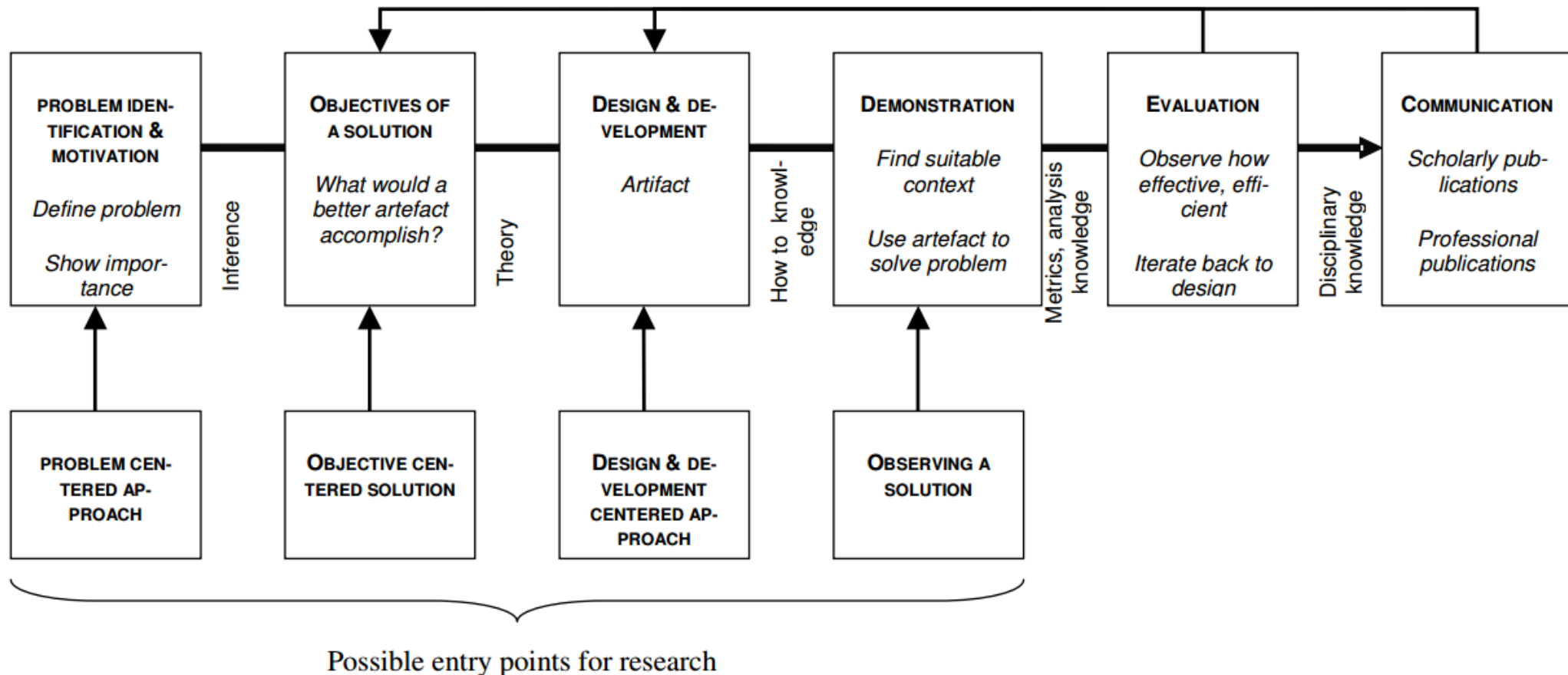


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# Current research regarding resources in process mining

- Performance
- Organizational structure
- Resource workload
- Resource preference
- Resource allocation mechanisms

# Methodology



# PROBLEM IDENTIFICATION

- Literature study
- Interviews
- Case study

# Context

- Software development
- Electronic SCRUM board
- Version control system (git/svn)
- Time registration

# GIT version control


gertjanssenswillen / edeaR

Watch 3 Star 2 Fork 3



Code Issues 1 Pull requests 0 Projects 0 Insights

Branch: master






Commits on Dec 1, 2016

-  **Post bupaR Version**  
gertjanssenswillen committed on Dec 1 2016 36218b2


Commits on Nov 18, 2016

-  **Merge branch 'master' of https://github.com/gertjanssenswillen/edeasR**  
gertjanssenswillen committed on Nov 18 2016 683954f
-  **Version 0.4.7**  
gertjanssenswillen committed on Nov 18 2016 903a210

Commits on Sep 29, 2016

-  **Merge pull request #5 from marijkeswennen/patch-4**  
gertjanssenswillen committed on GitHub on Sep 29 2016 6bd7656
-  **Update end\_activities\_log.R**  
marijkeswennen committed on GitHub on Sep 29 2016 4d41d41
-  **Merge branch 'master' of https://github.com/gertjanssenswillen/edeasR**  
gertjanssenswillen committed on Sep 29 2016 efd2a82
-  **Version 0.4.5**  
gertjanssenswillen committed on Sep 29 2016 35373f7
-  **Version 29092016**  
gertjanssenswillen committed on Sep 29 2016 782cc38

Commits on Sep 9, 2016

-  **Merge pull request #4 from marijkeswennen/patch-3**  
gertjanssenswillen committed on GitHub on Sep 9 2016 19d07a7



# Git commit details

Post bupaR Version [Browse files](#)  
master  
gertjanssenswillen committed on Dec 1 2016 1 parent 683954f commit 36218b23e6fcf20548b330c359a1f333691699e4

Showing 64 changed files with 167 additions and 1,203 deletions. Unified Split

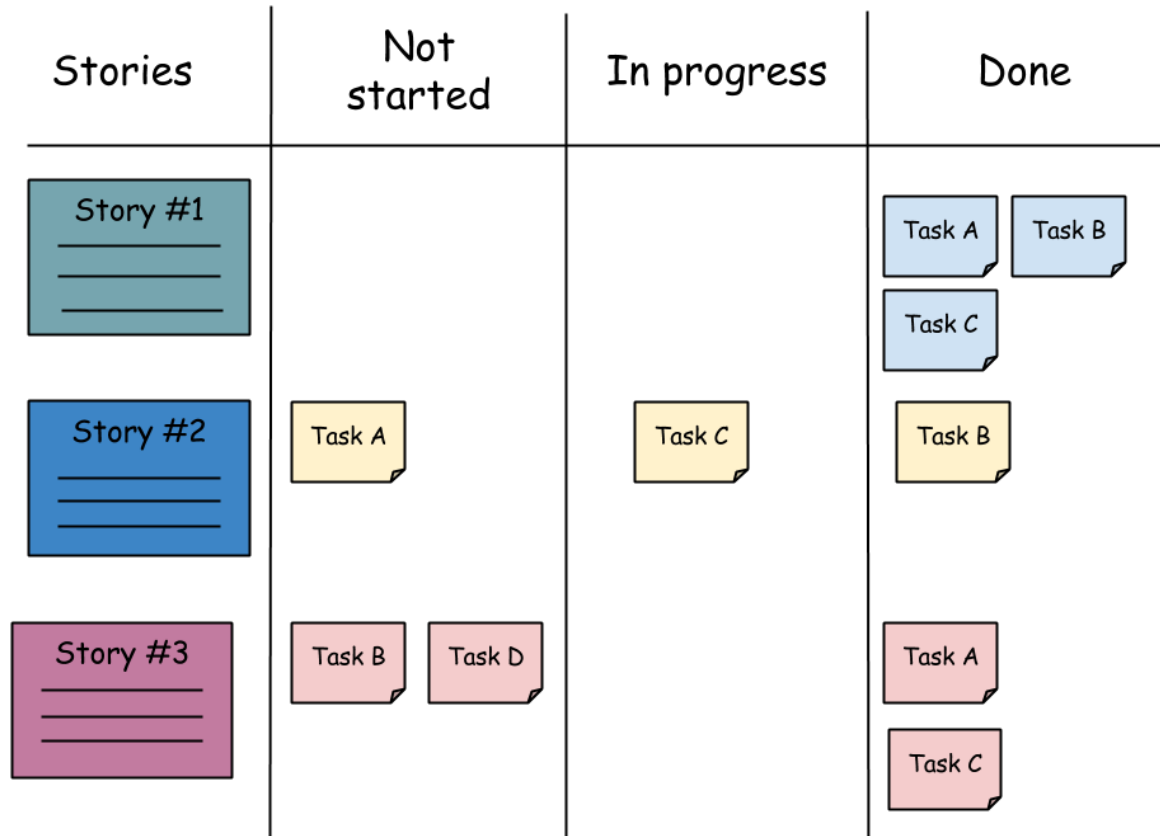
2 ■ ■ ■ ■ DESCRIPTION View ▾

```
@@ -3,7 +3,7 @@ Type: Package
3 3 Title: Exploratory and Descriptive Event-Based Data Analysis
4 4 Version: 0.4.7
5 5 Date: 2016-11-13
6 -Author: Gert Janssenswillen
7 +Author: Gert Janssenswillen [aut, cre], Marijke Swennen [ctb]
8 Maintainer: Gert Janssenswillen <gert.janssenswillen@uhasselt.be>
9 8 Description: Functions for exploratory and descriptive analysis of event based
10 9 data. Can be used to import and export Xes-files, the IEEE eXtensible Event
```

26 ■ ■ ■ ■ ■ NAMESPACE View ▾

```
... .. @@ -1,19 +1,10 @@
1 1 # Generated by roxygen2: do not edit by hand
2 2
3 -S3method(print,eventlog)
4 -S3method(print,eventlog_mapping)
5 -S3method(summary,eventlog)
6 -export(activities)
7 +export("%>%")
8 4 export(activity_frequency)
9 -export(activity_id)
10 -export(activity_instance_id)
11 5 export(activity_presence)
12 6 export(case_attributes_from_xes)
13 -export(case_id)
14 -export(cases)
15 -export(durations)
16 7 export(end_activities)
17 -export(eventlog)
18 8 export(eventlog_from_xes)
19 9 export(filter_activity)
20 10 export(filter_activity_frequency)
```

# SCRUM board



# Exploratory analysis scrum board

- Applied existing techniques to data from SCRUM board
- Hard to connect to knowledge
- Improved requirements

# Design Problem

Improve overview of knowledge in a software development company

By creating user profiles

That detail the technical skills of employees

In order to support functional leads to select the most knowledgeable teams

# Requirements

- **Resource profiles:** Technical knowledge, specific java libraries.
- **Based on existing, available data:** from version control system.
- **Remains up to date:** employees don't need to manually keep track of their technical knowledge

**CONCLUSION**

# Conclusion

- PHD: adding a knowledge management perspective to process aware information systems.
- Current research: Extracting technical knowledge profiles from version control systems.

**Questions?**