

SlickChair

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ABSTRACT

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1. INTRODUCTION

Peer reviewing is a central process in the organisation of scientific conferences. It involves multiple interactions between its participants: authors share their work with the program committee which is then in charge of reviewing these submissions. A program chair is designated to coordinate the process and decide on final submission acceptance. While this peer review process could be implemented by simply exchanging emails between participants, manually gathering submissions, assigning them to program committee members, aggregating the reviews and finally notifying the authors requires substantial efforts. The use of a dedicated software, called conference management system, can greatly simplify this process.

Over the last few years, numerous web based conference management systems have been developed. A recent comparative study [11] shows that EasyChair [5] is by large the most popular platform, having been used in about 68% of conferences organized with online conference management system. The following 4 systems in term of number of organized conferences are EDAS [6] with 8.5%, Open Conference Systems [9] with 6%, START V2 [14] with 5.7% and ConfTool [2] with 5.3%. However, out of these 5 systems, only Open Conference Systems is open-source. EasyChair and ConfTool offer free licenses of their restricted versions and START V2 and EDAS are only available as a commercial product.

The importance and confidentiality of the data manipulated by a conference management system imply that security is a major concern when working with such system. Closed

source solutions are often only available as hosted services, therefore requiring conference organisers to trust the company behind the product not only for the quality of the code, but also for the robustness of the infrastructure and the respect of data privacy. The open-source solutions we considered where not providing satisfactory levels of security. For example, Open Conference Systems sends a copy of the user passwords by email as plain text once the registration is completed. HotCRP [8], another open-source conference management system, has a similar flaw: it sends login links to users with the password as part of the url.

We present SlickChair, an open-source conference management system written in Scala. Built with the Play framework and the Slick database access library, SlickChair provides a highly flexible and extensible solution to manage peer review processes. Our contributions are in particular:

- The plan

2. OVERVIEW OF SLICKCHAIR

In this section gives an overview of functionalities of SlickChair. We first discuss how users.. (login, actors, phases (work-flow))

2.1 User authentication

The first contact between a system and its users is often via an authentication interface. Most conference management systems require users to create new accounts, which usually implies filling a form, receiving a validation email and memorizing a new password. Recent web browser implement mechanisms to reduced the pain of filling form and memorizing passwords, but these solutions are usually limited to the use of a single computer.

In SlickChair, we address this common problem by supporting 3 types of authentication mechanisms:

- Authentication via Facebook account
- Authentication via Google account
- Authentication via email address

The implementation of Facebook and Google login uses the OAuth 2.0 protocol [7], and is provided by the Secure Social authentication module for Play Framework [13].

In addition to associate each visitor with a unique identity, an objective of authentication is to get a valid email address to contact the user. This way, we avoid any chances of having typo in the email. When users login with Facebook or Google account, we trust the email address obtained via the OAuth protocol, given that both networks required their users to confirm their email address when they created their account. In the case of login via email, the process is obviously more complex. After providing his email address, a new user has to open his email client follow a validation link. From here, the user is asked his first name, last name, and a new password (of minimum 8 characters) before completing the registration. Passwords are hashed using the bcrypt algorithm [12] and stored in the database. SlickChair also gives its users the usual options to change their password or recover their account in case of forgotten password. Although authentication via email address add complexity to the system, it is appreciated by users that have separated email accounts for their personal and professional life.

2.2 Actors

- authors
- program committee members
- program chair

2.3 Workflow

This section presents .. from the pov of different actors of the system: authors pcms and program chair. [4]:

- Submission of abstracts and papers by Authors
 - Submission of reviews by the Program Committee Members (PCM)
 - Download of papers by Program Committee (PC)
 - Handling of reviewers preferences and bidding
 - Web-based assignment of papers to PCMs for review
 - Review progress tracking
 - Web-based PC meeting
 - Notification of acceptance/rejection
 - Sending e-mails for notifications
1. Submission of papers
 2. Assignment to reviewers
 3. Mailings to PC members
 4. Submissions of reviews
 5. Reviewer comment threads
 6. Distributed PC meeting
 7. Letters to authors

<http://www.texample.net/tikz/examples/simple-flow-chart/>

texdoc pgfgantt

Among his responsibilities, the assignment of submissions to program committee members can be a complex task. To be fair to all authors, submissions usually receive the same number of reviews, and this work has to be well distributed among program committee members so that no one over-loaded. Moreover, program committee members might have conflicts of interests with certain submissions and different levels of knowledge depending on the topics. These constraints add up for

3. DATA MODEL

- Logs where a requirement
- Inspired from Datomic [3] data model
- Re-implemented some of Datomic's functionalities as a layer on top of Slick/AnySQL
- Functionality and implementations are detailed in this section.

datastorage database do not need transactions for most operations still the go to product because of the abstraction layer, the backup capabilities and the power of the query engine.

- functional, immutable database
- database as a value, queries as a function
- timestamp implementation
- allows for concurrent read/write
- single thread alternative for

4. EVALUATION/WHY SCALA

Some subset of [9], [1], [15], [10]...

- compilers, typechecking everywhere
- server as a function
- case classes all the way

5. FUTURE WORK:

- Macros
- Scala.js

6. CONCLUSION

- ...

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