CmpE 352/451 Project
Academic Collaboration Platform
(Spring/Fall 2020)

The main objective of this project is providing an environment for academicians to create an opportunity for them to collaborate. This platform, which may widen the network among the academicians, helps to create interdisciplinary studies and to facilitate know-how sharing.

In environments where there are no crowded research groups, or to enhance the quality and scope of the studies, academicians may prefer to collaborate with authors from other institutions. As a simple scenario, let's assume that an academician has a well-defined paper topic, but it requires expertise to develop the idea and prepare the paper. After registering for the application, he/she can post this idea on the platform, specify the requirements, and look for a possible collaboration. As soon as the collaboration starts, the authors may start using this platform for managing the overall process. The same applies for an academic project, such as EU-funded projects. The deadline for the submission, the milestones throughout the collaboration, the submission document, codes, and any other related materials can be shared and monitored on this platform. Therefore, it can be said that this platform is not only an academic collaboration application but also a project management tool.

While creating an academic paper or project proposal, an academician can state this post as either public or private. If it is public, any collaborator may request to join the team of authors. On the other hand, if the post is created as private, this post cannot be seen by the users but the creator of the post can invite any academician to participate.

Each academician may have their own profile pages on the platform. This profile page shall provide information about the research area, recent publications, affiliation, and any other related content. Additionally, the users should be able to link their Google Scholar or ResearchGate accounts so that the contents of the profile page may be directly fetched from those platforms. The profile page of the users helps others to evaluate whether he/she has the necessary expertise to collaborate and contribute to the project or paper.

This platform also embraces the related information about the upcoming conferences or journal special issues, submission deadlines, and link to the CFP (call for papers) documents. Similar information is available for the academic project calls. After the team of authors is set, the targeted conference/journal/project is set by the authors, so that they can manage the process accordingly. The collaborators may track the deadline of submission, and the milestones set by the corresponding author (or the creator of the post). There should be a tab for preparing the submission document or article, which can be accessed by the collaborators simultaneously. Besides, the result plots, the figures, codes, and any other content can be shared through this platform.

The platform should support the W3C Activity Streams protocol [1] so that the activities on the platform are expressed as a stream. The events on the platform may cover, but not limited to, the actions taken by the set of users that follow each other or cooperate in a project.

In order to create a trustful environment, the users have ratings and comments on their profiles concerning their behavior and experiences. Therefore, any request can be evaluated by inspecting the profile page, the previous work, and the experiences of other authors in collaboration. Good comments about a user may be an indicator of the expertise in a specific research area.

The users may search the available content within the platform if they are looking for something specific. In addition to the basic search through keywords, this system should support an advanced search mechanism that enables further functionality. The users may utilize the advanced search facility to search content concerning the research area, topic, scope and difficulty. Additionally, the tags of the contents can be helpful to extend the scope of the search mechanism by enabling the

semantic search. For instance, if an academician desires to contribute to a paper, he/she can search the related keywords, and find related the posts with regards to the tags.

Based on the user activities and profile, the recommendation mechanism that the system provides may recommend a set of paper or project proposal that the user may be interested in.

The main design of this project is composed of a web application with necessary API implementations for the front-ends. In addition to the web platform, this project requires a native Android application that supports the same functionalities, even more, that are defined through API calls. The native Android application should be implemented in a user-friendly manner so that the users can be active while they are mobile.

The implementation of this system should follow the standards introduced by the World Wide Web Consortium (W3C) [2]. In addition to the rules defined by the standards body of W3C, any related software standards should be followed. Besides, ethics is an essential issue of this project. There may be personal contents within the system. The personal information, contact information, copyrighted contents, license issues, and everything related to these paradigms should be respected and considered. You must follow the rules defined by GDPR and KVKK while implementing the application. **(Please read the ethical considerations in Piazza with respect to ethical concerns what is expected of all participants!)**

Open-source software with appropriate use permissions may be used, as long as it is properly attributed and documented. The application should be deployable on a remote and manually configurable remote server. We strongly recommend you to use Amazon EC2 or DigitalOcean. Lastly, to ease the development and deployment processes, the application should be dockerized.

References

[1] *The World Wide Web Consortium – Activity Streams*, Accessed: February 2020.

[2] *The World Wide Web Consortium – Standards*, Accessed: February 2020.