



UNDERGRADUATE THESIS

DESIGN AND DEVELOPMENT OF AN ALUMNI COMMUNITY PLATFORM BASED ON THE COMMUNITY OF INQUIRY MODEL USING CONTENT BASED FILTERING (Case Study: UPAPKK UPN "Veteran" East Java)

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FACULTY OF COMPUTER SCIENCE
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2026**

APPROVAL SHEET

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STATEMENT OF ORIGINALITY

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Hereby declares that this undergraduate thesis contains no part of any other scientific work that has been submitted to obtain an academic degree at any higher education institution. Furthermore, it does not contain any work or opinions previously written or published by others, except for those which are explicitly cited in this thesis and listed completely in references.

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ABSTRACT

Student Name / NPM : Regan Putra Ramadhan / 22081010036
Thesis Title: Design and Development of an Alumni Community Platform Based on the Community of Inquiry Model Using Content Based Filtering (Case Study: UPAPKK UPN "Veteran" East Java)
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Synergy between universities and alumni networks is strategic capital in improving the quality of institutions and graduate careers. However, the Career Development and Entrepreneurship Unit (UPAPKK) of UPN "Veteran" East Java is currently facing obstacles in the form of communication fragmentation due to the spread of alumni interaction in various informal channels, as well as the matching process of mentoring programs which are still manual and inefficient. This research aims to design and implement a web-based alumni community platform that adopts the Community of Inquiry (CoI) framework and integrates the Content Based Filtering (CBF) method in the mentoring feature. This research applies the Design Science Research (DSR) approach with Agile Scrum development methods, Three-Tier architecture, and utilizes the Go programming language and Vue.js framework. The implementation of CoI is focused on Social, Cognitive, and Teaching Presence elements to build a collaborative discussion ecosystem. Validation of system functionality is carried out through Black Box Testing which proves that all features are running according to specifications. The evaluation of the CBF method using the Mean Average Precision (MAP) metric resulted in a score of 82.5%, which indicates the initial feasibility of this method as a decision support tool in recommending relevant mentors. In addition, usability testing using the System Usability Scale (SUS) on 15 respondents obtained a score of 76.66, which was categorized as "Good" and "Acceptable". The results of this study show that the platform built is adequate as an interactive and user-friendly initial implementation, and has great potential in facilitating knowledge exchange and professional opportunities.

Keywords: Alumni Community Platform, Community of Inquiry, Content-Based Filtering, Design Science Research, System Usability Scale.

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The author realizes that in the preparation of the following thesis there are many shortcomings. For this reason, constructive criticism and suggestions from all parties are highly expected for the perfection of writing the following thesis. Finally, with all the limitations that the author has, hopefully the following report can be useful for all parties in general and the author in particular.

Surabaya, July 10 2026

Regan Putra Ramadhan

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