Improving Effectiveness of Dialogue in Learning Communities

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ABSTRACT

In a learning community, conventional discussion forums are integral to web-based interventions in traditional classrooms as well as on-line learning environments. Despite popular belief that they are a great success in fostering deep and meaningful discussions and support active learning; research has found that there are millions of messages posted by users to express such an opinion, but it is hard to be directly delivered to all users. Finally there are millions of postings in databases across the country stored away and never reused. This thesis introduces a PhD student’s current research work. It proposes a distributed intelligent discussion forum system dedicated to supporting both students and teachers. The system is developed with the primary goal of reducing the number of problems associated with conventional discussion forum systems in web-based environments and improving the effectiveness of dialogue between students with each other and with teachers so that it can enhance each individual student’s ability to share and learn knowledge.
ACKNOWLEDGEMENTS

In the last four years, the writing process of the thesis included both joyful and painful moment. Even there were times when I thought the work will never finish. Therefore I must be sincerely grateful to my supervisor, Dr. Kinshuk, Professor for his guidance, advice and inspiring wisdom throughout this project and for his lots of valuable support and supervision from the beginning of the research project, without which this thesis would not have been completed. He gave me such patient, effective support and encourages in such long time,

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Your thought, help and kindness will encourage me to keep going!

Thanks You All!

Yours truly,
Jingyu Yang
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACM</td>
<td>Association of Computing Machinery</td>
</tr>
<tr>
<td>AI</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>AWBES</td>
<td>Adaptive Web-based Educational Systems</td>
</tr>
<tr>
<td>BSD</td>
<td>Berkeley Software Distribution License</td>
</tr>
<tr>
<td>C4P</td>
<td>Content, Conversation, Connections, (information) Context, and Purpose</td>
</tr>
<tr>
<td>Equake</td>
<td>Electronic Question and Answer Knowledge Environment</td>
</tr>
<tr>
<td>ER</td>
<td>Entity Relationship</td>
</tr>
<tr>
<td>GPL</td>
<td>General Public License</td>
</tr>
<tr>
<td>HTTP</td>
<td>Hypertext Transfer Protocol Overview</td>
</tr>
<tr>
<td>IDE</td>
<td>Integrated Development Environment</td>
</tr>
<tr>
<td>IDF</td>
<td>Inverse Document Frequency</td>
</tr>
<tr>
<td>ID-B</td>
<td>Intelligent Discussion-Bot</td>
</tr>
<tr>
<td>IEEE</td>
<td>Institute of Electrical &amp; Electronics Engineers</td>
</tr>
<tr>
<td>IIS</td>
<td>Information Interactive Systems</td>
</tr>
<tr>
<td>IR</td>
<td>Information Retrieval</td>
</tr>
<tr>
<td>IRS</td>
<td>Information Retrieval Systems</td>
</tr>
<tr>
<td>LSA</td>
<td>Latent Semantic Analysis</td>
</tr>
<tr>
<td>LSI</td>
<td>Latent Semantic Indexing</td>
</tr>
<tr>
<td>MVC</td>
<td>Model-View-Controller</td>
</tr>
<tr>
<td>NPL</td>
<td>Natural Language Process</td>
</tr>
<tr>
<td>SOAP</td>
<td>Simple Object Access Protocol</td>
</tr>
<tr>
<td>SVD</td>
<td>Single-Value Decomposition</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<td>----------------------------------</td>
</tr>
<tr>
<td>TF</td>
<td>Term Frequency</td>
</tr>
<tr>
<td>URL</td>
<td>Uniform Resource Locator</td>
</tr>
<tr>
<td>W3C</td>
<td>World Wide Web Consortium</td>
</tr>
<tr>
<td>WSDL</td>
<td>Web Services Description Language</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Markup Language</td>
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