

Thesis Project Portfolio

Streamlining Cvent's Data Fetching Process

(Technical Report)

Importance of Website Optimization in Full-Stack Development

(STS Research Paper)

An Undergraduate Thesis

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Moez Sohail

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Sociotechnical Synthesis

My technical report focuses on designing and implementing a full refactor of Cvent's Instant Book platform to optimize the data fetching process. During my time at Cvent as a Software Engineer Intern in the summer of 2022, my team and I found that the application was inefficient in obtaining data from external sources. The application used a modern query language called GraphQL to obtain data from REST APIs. However, the application was processing these queries slowly, which indicated that the platform must be optimized. As a result, I replaced the previous data access modules with Apollo data sources, which makes obtaining data from a specific source more efficient. Due to these optimizations, users experienced faster load times when searching for and booking venues in the application.

My STS research paper draws inspiration from my technical project as it focuses on the importance of website optimization in full-stack development. As a full-stack software engineer, I experienced firsthand how important it is to optimize front-end and back-end performance in full-stack applications. In the paper, I outline why companies should optimize their websites and provide an analysis of various front-end and back-end optimization techniques. Website performance has a direct impact on user retention and conversion rates. Websites that take a long time to load resources or accomplish tasks have lower rates of user retention and conversion. Users are more likely to stay on a site or complete a certain task if the site loads quickly. However, it is difficult to establish which optimization techniques are the most effective. Therefore, software developers must use various techniques across both the front-end and back-end to maximize application performance. Furthermore, there are many stakeholders involved in website optimization with varying levels of power that developers have to consider when making optimization decisions.