Thesis Portfolio

Modernizing Thru-Hiking: A Web Application Design to Connect the Appalachian Trail Community

(Technical Report)

Technology and the Outdoors: An Analysis of Technology to Improve Outdoor Recreation

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

Introduction

Technology has modernized the outdoors and altered people's expectations and approaches to outdoor recreation. These changing dynamics introduce new challenges and debates surrounding safety practices and wilderness preservation. My STS research analyzes the effect of technology on outdoor recreation from human factors and environmental perspectives. My technical project involved designing and building a web application for the Appalachian Trail community to facilitate an inclusive digital community. These two projects are tightly coupled, as they both explore the relationship between technology and outdoor recreation.

Project Summaries

My STS research investigated how technology is changing outdoor recreation and how people experience outdoor spaces. In this paper, I focused on safety, wellness, diversity, and sustainable land management as the principal areas of impact. My research revealed education as crucial to responsible technology use in the outdoors and identified virtual reality (VR) and social media as promising tools for positive change. Additionally, this project included recommendations on how technology can be used to encourage outdoor participation while protecting natural areas through information outlet targeting and supplemental land monitoring opportunities. My research examined the concerns surrounding technology in outdoor recreation and concluded the net effect on outdoor spaces and experiences is beneficial.

The goal of my technical work was to create a web application that provides long-distance Appalachian Trail backpackers (thru-hikers) all the information they need in a single source while facilitating a digital community. Unlike other sources, the web app's primary goal is to

make thru-hiking the Appalachian Trail more assessable to marginalized communities while increasing inclusion in the outdoors community. The key components of the design are a selection of hand-chosen articles, an interactive question forum, and affinity space chat rooms. Design requirements for the project were collected through informal user interviews with past and aspiring thru-hikers, consisting of questions surrounding their pre-hike research experience. As of May 2023, the project is still in the testing and development phase, therefore is not deployed to the general public.

Conclusion

Whereas my STS research analyzes how technology is changing outdoor recreational experiences and spaces, my technical project applies technology as a tool to the outdoor community. By completing my STS project, I gained insight into the possible ramifications of my web app on wilderness areas, specifically relating to overcrowding. Likewise, through user interviews for my technical project, I saw first-hand the difference technology can have in how people experience the outdoors. Working on both projects allowed me to consider both the practical application and ethical significance of the issue which ultimately emphasized the need for more extensive testing before deploying the web app. By simultaneously completing both projects, new perspectives emerged that strengthened each project and led to higher-quality deliverables.