

Thesis Project Portfolio

Facilitating the search for Off-Grounds Housing at UVa

(Technical Report)

Why do Artificial Intelligence based hiring systems, which include both the technology and the people that interact with it, result in hiring that might seem inequitable at times?

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

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Spring, 2023

Department of Computer Science

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Prospectus

Sociotechnical Synthesis

Given the new Computer Science department guidelines, I did not complete a capstone.

Therefore, my technical project and STS Research paper are separate and should be considered as stand-alone sections.

The technical project was a website created to help Uva students with the Off-Grounds Housing search. The objective was to create a central application that makes the search personalized and easy. The website included features to allow students to browse and sort different housing options with accurate information and to communicate with others regarding housing. Most notably, our project enabled students to look for housing through our map search and sorting features. Students were also able to communicate with each other through publicly available reviews and a public forum. This website utilized Django as the web framework and involved the use of UI/UX design, unit testing, databases, and Heroku deployment. Although all of the features of the website are functional, the UI/UX design can be improved to reflect the changing needs of the students in the future.

The STS Research Paper focuses on studying the sources of biases in AI hiring systems in the hopes of mitigating them. The bias against underrepresented demographics in AI hiring systems can be examined and potentially mitigated by using the Actor Network Theory to examine the role of different actors in the AI hiring system. The ANT framework can be applied to AI hiring systems by examining the roles of algorithms, datasets, candidates, and hiring managers and how they propagate bias in hiring decisions. By analyzing the effect of these actors on the technological development of AI hiring systems, the source of the bias can be pinpointed and potentially mitigated.