Thesis Project Portfolio

Automated Loan Servicing Documentation

(Technical Paper)

Adoption of Robotic Process Automation

(STS 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

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Sociotechnical Synthesis

Humans have used automation to work more efficiently for millenniums, but only recently have we applied it to pre-existing computerized systems. Both my technical report and my STS research paper deal with this kind of automation, called Robotic Process Automation. RPA allows automation to be built on top of existing computer systems to allow for human labor to be used more efficiently. I was able to apply RPA techniques in order to automate documentation on loan service agreements during my time as an intern at Wells Fargo in the summer of 2022. The experience I had utilizing RPA inspired me to look deeper into the adoption of RPA in other businesses. For this reason, I based my STS research paper on RPA's acceptance in professional fields.

During my time at Wells Fargo, I was given the task of finding loan servicing documentation among large loan servicing agreement PDFs. I would need to find a way to extract important information out of these documents in the same way a human would, through fully computerized means. I was unaware at the time that the work I was doing was considered RPA, as I only discovered the terminology once I started working on my prospectus. The task in itself was a nice challenge, and I enjoyed my time working on the project. I was able to use regex expressions to search for key terminology and simple file system searching to find the loan servicing documents. More interesting than my technical work, however, was the environment I worked in at Wells Fargo, and how it shaped my thinking on automation.

I was repeatedly delayed in my efforts to start on my project at Wells Fargo due to push back from my supervisors that worried my project could jeopardize the jobs of certain Wells Fargo employees. One of the main roles of these certain employees was to produce, manually, the documentations I would be automating. This opposition to my work made me wonder about how other business react to the same type of automation I would be providing, which shaped my future research in my STS paper, where I examine the adoption patterns of RPA implementations like mine.

My technical paper and STS research paper are tightly coupled in this regard. My technical paper deals with my actual work in creating an RPA documentation program for the loan servicing agreements at Wells Fargo, while my research paper investigates the rate of adoption and reception of RPA in a variety of businesses. I wanted to see how projects like mine have grown and adapted in different fields, whether or not they faced the same apathy to automated solutions as I did, and how it has affected those businesses on the whole. The research I did on RPA was an extension of the curiosity I had while working on my own RPA implementation. My experience with RPA was not only great for getting professional experience in programming, but for understanding how the work I do affects myself, the people around me, and the business itself.