

**Thesis Project Portfolio**

**Database Error Detection: Automatically Identifying Exceptions for Loan Servicing Software**

(Technical Report)

**Robinhood and Financial Technology's Impact on Risk-Taking Behavior and Financial Markets**

(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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### **Sociotechnical Synthesis**

Through the framework of technological citizenship, this paper analyzes the practices of FinTech companies and their effect on the risk-taking behavior of retail investors. Technological citizenship posits that laypeople have certain rights and responsibilities with respect to technology and its environmental hazards. Particularly, the framework asserts that citizens have a right to informed consent and a reasonable assumption of risk when interacting with a technology. FinTech is a growing sector that applies technologies like blockchain, artificial intelligence, and the internet to financial services. In recent years, FinTech has increasingly replaced and affected existing financial services, thereby playing a larger role in the financial activities of laypeople. However, as a recently developed industry which lacks the established precedent and regulation of financial institutions, FinTech commonly occupies a gray area within financial law. Many of these companies claim to provide individuals access to financial products previously restricted to institutional and sophisticated investors, yet they often fail to adequately communicate the associated risks. Furthermore, they advertise sign-up rewards and inducements specifically to target individuals inexperienced with finance and investing who may be more likely to assume risk without being aware of it.

By using the commission-free brokerage mobile application Robinhood as a case study, this research analyzes these affects by measuring the change in stock market volatility associated with increased usage of FinTech products, which would be expected to increase as unaware investors assume more risk. The results of a regression analysis of this data show that Robinhood user growth is negatively correlated with expectations of short-term stock market volatility. As such, it argues that FinTech promotes market stability by furthering technological citizens' rights to knowledge and providing more equal access to financial products between laypeople and

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experts. Therefore, any additional regulation should aim to maintain the novel financial freedoms that it provides. Yet, more research is necessary to examine the specific practices of FinTech companies that could impact the rights of technological citizens.