

**Thesis Project Portfolio**

**A Financial Literacy AI-Enabled Voice Assistant System for Educational Use**

(Technical Report)

**Risk of Financial Illiteracy**

(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

**Vineeth Sai Thota**

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Department of Systems and Information Engineering

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## **Sociotechnical Synthesis**

Educating the youth on the topic of financial literacy remains a key priority for our rapidly changing society. It is the responsibility of schools, teachers, and adults to constantly engage and educate the following generations on how to spend, save, and invest their money wisely. Especially with the emergence of crypto currency and NFTs, the necessity to know what to do with large sums of money is crucial in maintaining financial stability.

The technical thesis proposes an artificial intelligence enabled virtual voice assistant to help expand financial literacy to students from elementary to high school. The goal of the research was to discover the best path of optimizing lesson plan content generation on our desired cloud platform. Through our system evaluation metrics, we measured our project by 1) effectiveness of the voice assistant, 2) robustness of the system, 3) engagement of the conversations, and 4) strength of parameter infrastructure. The utilization of Google Dialogue Flow and the R application allowed for constant iteration and editing of the virtual voice assistant.

The STS thesis strives to investigate the risk of financial illiteracy throughout our communities. Many students are financially illiterate when graduating high school which poses a significant risk to their eventual stability. The education outreach is quite important to enable students to gain a proper foundation on various economic topics. With the ability to provide multiple resources such free annual credit reports, information on home ownership, and financial trading apps, one can be better equipped to make sound financial decisions in the future. The younger generation must continue to grow and develop in their financial education since the World is rapidly changing.

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