

Thesis Portfolio

Digital Theremin

(Technical Report)

The Future of Space Travel

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Sciences

University of Virginia – Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Spring, 2020

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Sociotechnical Synthesis

My thesis deals with the future of space travel through the lens of normalized deviance. It first examines the Challenger disaster, one of the worst space failures in history, before turning its gaze towards SpaceX and NASA's plans for the future and analyzes how we can learn from our past mistakes to eliminate the presence of normalized deviance in the industry.

My technical thesis, or Capstone project, does not relate to or overlap with my thesis at all. My group decided to design and create a Theremin from scratch, one of the first electronic instruments. However, we put a slight spin on the original instrument by electing to produce the sound digitally using an analog to digital converter (ADC) and a digital to analog converter (DAC), as opposed to using electromagnetic fields to generate tones.