

## **ABSTRACT**

**THESIS:** Cost Minimization Under Sequential Testing Procedures Using a Bayesian Approach

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In sequential testing an observer must choose when to observe additional data points and when to stop observation and make a decision. This stopping rule is traditionally based upon probability of error as well as certain cost parameters. The proposed stopping rule will instruct the observer to cease observation once the expected cost of the next observation increases. There is often a great deal of information about what the observer should see. This information will be used to develop a prior distribution for the parameters. The proposed stopping rule will be analyzed and compared to other stopping rules. Analysis of simulated data shows under which conditions the cost of the proposed stopping rule will approximate the minimum expected cost.