## **DEPARTMENT OF COMPUTER SCIENCE NORTH CAROLINA A&T STATE UNIVERSITY**

**STP Testing Report**

**COMP 496: SENIOR DESIGN II**

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**STACK UNDERFLOW**

**LUMI**

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#### Testing Scope

Lumi is a responsive web application built using REACT, HTML, Javascript, and Python. It includes mood check-ins with sentiment analysis, journaling, and AR-based wellness exercises

#### What Features Are Tested

* Mood Check-in System: Validated for sentiment classification (positive/negative).
* Journaling Feature: Tested for input validation, save/load accuracy.
* AR Wellness Exercises: Tested Three.js-based breathing and walking modules for usability.
* Sentiment Analysis: Evaluated accuracy and reliability using sample inputs.
* API Endpoints: Verified data fetch/store operations for journaling and mood inputs.
* Database: Ensured all entries were uploaded and updated to the database in real time

#### What Features Are Not Tested

* Deep robustness of AR experiences across all browsers (due to limited AR access)
* Future integrations since they are not yet implemented

#### Manage Risk

Risks include:

* Data Privacy: Due to sensitive user input.
* AR Feature Support: Limited browser compatibility may hinder user experience.
* AI Model Misclassification: Incorrect mood prediction can affect user trust.

#### Testing Strategy

* Unit Testing: Perform for key functions in journaling and mood tracking.
* Integration Testing: Ensure sentiment analysis integrates cleanly with the front-end.
* Manual Testing: AR and UI responsiveness checked by team
  + AR will be tested using a MetaQuest 3
* Checklist-Based Testing: Validate all planned features using a detailed checklist.

#### Item Pass/Fail Criteria

* Pass:
  + AR exercises execute without critical errors
  + Outputs are accurate
  + UI is responsive.
* Fail:
  + Incorrect predictions
  + Broken UI
  + Unresponsive components
  + Application crashes during use.

#### Open Defects

* Security: Basic user encryption needs to be implemented to ensure user information is transmitted securely.
* Sentiment API occasionally times out under slow networks