

Lightning Talk 8

Ethics and Professional Responsibility

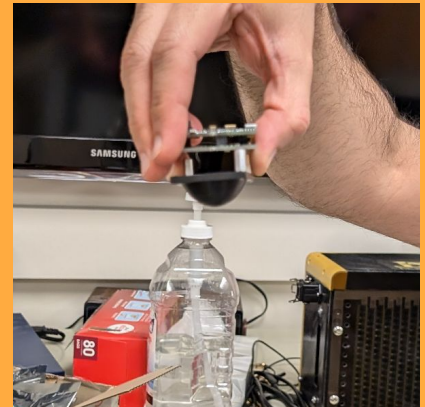
SDMay25-15

Advisor: Dr. Tayeb

Luke Post, Nate Reff, James Peterson, Daniel Ripley-Betts

Project Overview

- Millimeter wavelength **A**rmed **V**oron (**MAV**inator) scanner
 - Voron 3D printer platform
- 3D Scanner design
 - Stepper motor
 - Belt driven gantry
- User interface
 - Web enabled application
 - Python
- Predetermined path to cover the scan bed



Well Performing Responsibility

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Communication Honesty

~Perform work of high quality, integrity, timeliness, and professional competence

- Need our mentor to know what is going well and poorly
- Approach:
 - Open communication with our mentor
 - Acknowledge when we are behind schedule
 - Go to him with all issues
- We report all work truthfully and without deception.

Underperforming Responsibility - Financial Responsibility

~ Deliver products and services of realizable value and at reasonable costs

- Limited to 300 x 300 x 300 mm
- Approach
 - Strength
 - Using open-source platform
 - Challenge
 - Some electrical components are expensive
- Proposed Changes
 - Detailed Cost Benefit Analysis
 - Market Research
 - Cost Efficient design

Broader Context Area-Four Principles Chart

	Beneficence	NonMaleficence	Respect for Autonomy	Justice
Public health, safety, and welfare	The Scanner supports safe imaging for non-invasive applications	Design avoids harmful practices by sourcing reliable components and uses proper documentation	UI allows users to control scans safely	Implementation allows user-friendly accessibility and reliable performance
Global, cultural, and social	Scanner gives access to advanced imaging technology that can benefit 3D scanning industries	Scans will not harm people due to safety standards during building	The MAVinator will use a simple user interface making it usable by people of all different backgrounds	Since it is open-source, it will be made available to several groups of people
Environmental	design promotes sustainability by using durable components to minimize waste	The design will be aesthetically pleasing, kept indoors, quiet, and resources will be used properly to reduce power consumption	The MAVinator will not use up excessively more space than it needs for the scam	Our scanner will be kept indoors and not affect the environment directly, and it also uses common resources to build
Economic	The scanner will speed up workers performing scans, cutting down on time costs	Cost effective design would not hinder other projects	We are creating this scanner as an open-source attachment for the Voron printer so the user can adapt it to their needs	The scanner will not affect any users or peoples in an unfair manner

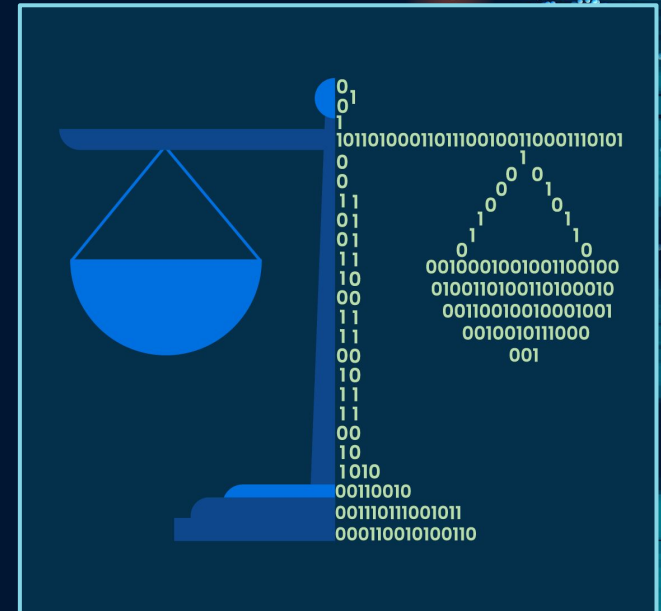
Potential Ethical issues

- Injury to users from lack of documentation
- Noise pollution
- Excessive power consumption
- Aesthetically unpleasant in the lab environment



Conclusions

- 3D mm Wave Scanner
- Communication honesty
 - Integrity, open communication
- Financial Responsibility
 - Market Research + Cost Benefits
- Broader context
- Potential Ethical Issues
 - Injury, noise, & sound



The background is a dark blue gradient. It features two large, abstract, glowing shapes on the left and right sides. These shapes are composed of many small, white, dot-like particles arranged in a grid-like pattern. Bright orange and yellow light streaks and flares emanate from the top corners, creating a sense of energy and movement. The overall aesthetic is modern and high-tech.

Thank you