

# SYSTEMATIC LITERATURE REVIEW OF [FREE AND] OPEN SOURCE HARDWARE

ECE 1785 / CSC 2130 – EMPIRICAL SE

## GROUP 17

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# AGENDA – IN 6 MINUTES

- Motivation
- Research Questions
- Study Method
- Anticipated Results

# MOTIVATION: FOSS (FREE & OPEN SOURCE SOFTWARE)

- Founded by Software Engineer, ...
  - Richard Matthew Stallman (RMS)
- Four Principles<sup>1</sup>:
  - The freedom to run the program
  - The freedom to study and change program
  - The freedom to redistribute program
  - The freedom to distribute modified program



# HARDWARE CHALLENGE

- FOSS has been a great success
- Hardware has always been a challenge



# HARDWARE SOLUTION?

- Surge of interest into “ Open Source Hardware (OSH)”
- Community built hardware
- Commercially available hardware
- Open Source Hardware Association
- Surge in Research Literature
  - Two Journals since 2017
    - Journal of Open Hardware
    - HardwareX

# OUR RESEARCH

- How “free” is [F]OSH
  - What are the types of licenses that the OSH are using?
- How does it compare
  - What is the state-of-the art FOSH? What are its technical specifications compared to nonFOSH?
- What are the main challenges with the development, adoption, and sustainability of FOSH?
- What does (or should) its future look like

# STUDY METHODOLOGY

- **Systematic Literature Review**
  - Comb through of
    - Journal of Open Hardware
    - HardwareX

Since 2017 inception

- Commercial and community applications
  - Projects tracked by the Open Source Hardware Association

# ANTICIPATED RESULTS

- We found  $N$  hardware of  $C$  categories with these licenses  $[l_1, l_2, \dots, l_N]$
- Comparison of the best FOSH in each category  $C$  with the nonFOSH
- Main assumption about FOSH:
  - Specialised & scientific hardware
    - Explains the challenges of FOSH
- Future: missing pieces in the FOSH landscape



# THANK YOU

## QUESTIONS & ANSWERS



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