

# SYSTEMATIC LITERATURE REVIEW OF FREE AND OPEN SOURCE HARDWARE

ECE 1785 / CSC 2130 – EMPIRICAL SE

## GROUP 17

ALI RAEISDANAEI

JINGYUE ZHANG

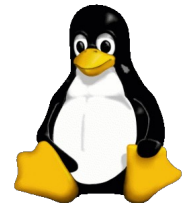
TIANTIAN LIN

ZIQIAN QIU



# FOSS (FREE & OPEN SOURCE SOFTWARE)

- Four Principles<sup>1</sup>, the freedom to
  - run the program
  - study and change program
  - redistribute program
  - distribute modified program
- Biggest benefit:
  - Social: Democratisation
  - Technological: Innovation



# FOSH (FREE & OPEN SOURCE Hardware)

- Follows the same principles as FOSS
- FOSH is anything that is needed to exercise these four principles<sup>1</sup>:
  - Blueprints
  - Design files



# Main Motivation & Anticipated Significance

- Learn principles and success stories about the open source movement outside of open source software.
- Results can be significant, as they can improve the collaboration of the open source software movement both technically and socially.

# HARDWARE SOLUTION?

- Surge of interest into “ Open Source Hardware (OSH)”
- Commercially available hardware
- Open Source Hardware Association
- Multiple Journals since 2017
  - Journal of Open Hardware
  - HardwareX
  - The Journal of Open Engineering

# OUR RESEARCH

- RQ:
  - How does OSH look like in terms of
    - $RQ_A$ : Licensing
    - $RQ_B$ : Scope and types of products
    - $RQ_C$ : Collaboration environments

# STUDY METHODOLOGY

## Systematic Literature Review

- RQA:
  - Use scrapers and scripts to collect licensing information on all literature.
- RQB:
  - Read the literature in the OSH journals since 2017 to understand scope and types of applications.
- RQC:
  - Look at community platforms and responses

# Select relevant studies for FOSH:

Main Keywords	Derived Keywords
Free and Open source Hardware	FOSH, Open Hardware, free and open source hardware, Free and Open Source Software, Open source product development, open source, open innovation, open source innovation, open design

Table 1. Keywords for identifying the FOSH Literature



# Anticipated Results

- $RQ_A$ :

- Creative Commons license is used far more than any others

- $RQ_B$ :

- Limited to what can be built by non-Industrial practitioners

- $RQ_C$ :

- Smaller and tighter networks

# THANK YOU

## QUESTIONS & ANSWERS



UNIVERSITY OF  
TORONTO

