SYSTEMATIC LITERATURE REVIEW OF [FREE AND] OPEN SOURCE HARDWARE

ECE 1785 / CSC 2130 - EMPERICAL SE

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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 Principles1:
 - The freedom to run the program
 - The freedom to study and change program
 - The freedom to redistribute program
 - The freedom to distribute modified program

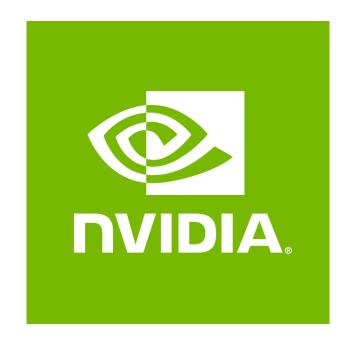




HARDWARE CHALLENGE

- 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 <u>Open Source</u> Hardware Association



ANTICIPATED RESULTS

- We found N hardware of C categories with these licenses $[l_1, l_2, ..., l_N]$
- 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



