Course Introduction

Advanced Embedded Linux Development

with **Dan Walkes**

University of Colorado **Boulder**

Learning objectives:

Introduction to the course

Why learn Linux?

What this course is and isn’t

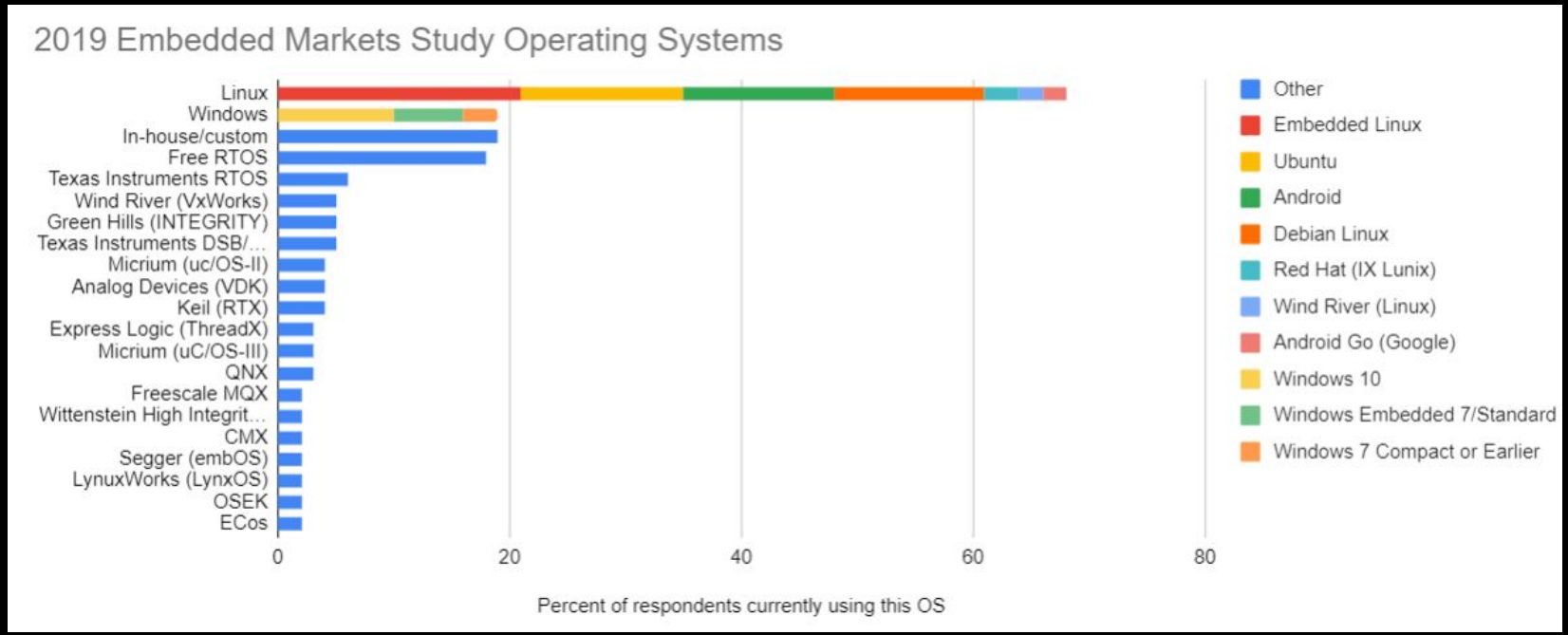
Who Is This Guy?

- Dan Walkes
- Work full time in Industry and teach part time
  - VP of Embedded Engineering at Sighthound
- Began teaching Spring 2019 semester
- Former CU Boulder ESE student in the early 2000s
  - Former TA for ECEN 5623 Real Time Embedded

Who Is This Guy?

- 20th year of Industry experience in 2019
  - Most of the past 10 has been Linux embedded systems related.
- Not a Dr. or Professor. Please call me Dan.
  - Think of me as a team lead on your development team.

Why Learn Linux?



- Based on 958 responses Jan-March 2019

EETimes Embedded Market Study 2019
https://www.embedded.com/wp-content/uploads/2019/11/EETimes_Embedded_2019_Embedded_Markets_Study.pdf

Course Objectives

- Understand how to configure and deploy a Linux based Embedded System.
- Gain experience with common Linux system build tools and components:
  - BASH and shell scripting
  - Buildroot and Yocto
  - QEMU

Course Objectives

- Gain experience with Linux Driver development
- Improve your resume/interview skills in relation to Embedded Linux!
- Cover topics I wish I would have had as a part of my graduate studies.
  - In many cases they didn’t exist yet.

What This Class is NOT

- Not a data structures or algorithms course.
  - We will cover these only from the standpoint of how to use existing libraries/software.
- Not a low resource microcontroller/FreeRTOS course.
  - Not covering event loops or protocols like Bluetooth
  - Not specifically covering sensors
  - Not covering low resource embedded libraries.