OCP
FUTURE
TECHNOLOGIES
SYMPOSIUM

OCP Symposium
October 6, 2020 | (Re)Designing Collaboration

Meeting the Challenge with Spartan Spirit at Silicon Valley's Public University

David Wahlgren Parent

SJSU SAN JOSÉ STATE UNIVERSITY

Agenda

- Case study using open source tools
- Remote Formative Assessment
- Empathy for students remote learning
- Future of work

# Long term benefit of open source/free tools

- Students can continue to use tools after they graduate to form their own startup companies.

- No licensing server required

- Tool stability

- Prepares students for commercial CAD tools

Case Study: Stochastic resonance using a Schmitt Trigger

- 14 incoming transfer, assume no prereqs students participated in a two week "summer camp" and learned how to participate in a research program in an authentic manner.
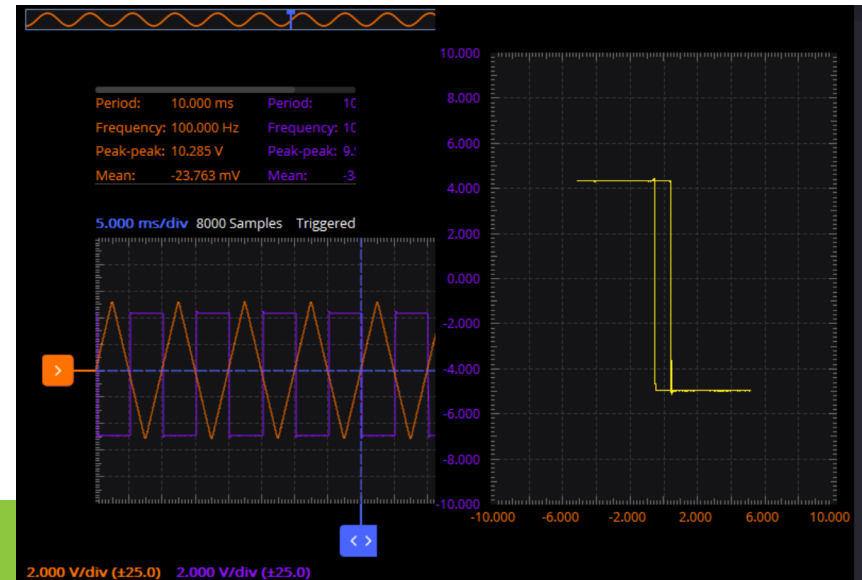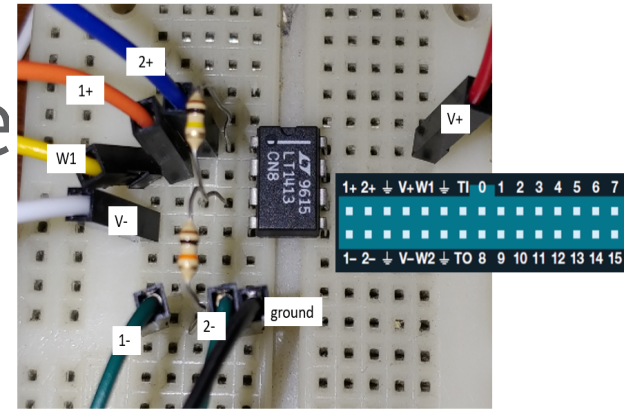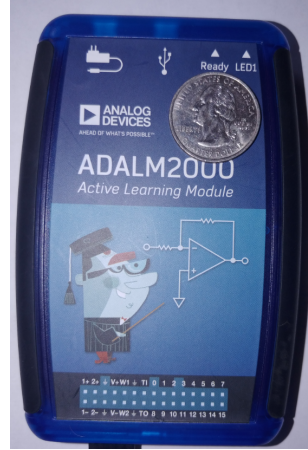
- LTspice

- Python
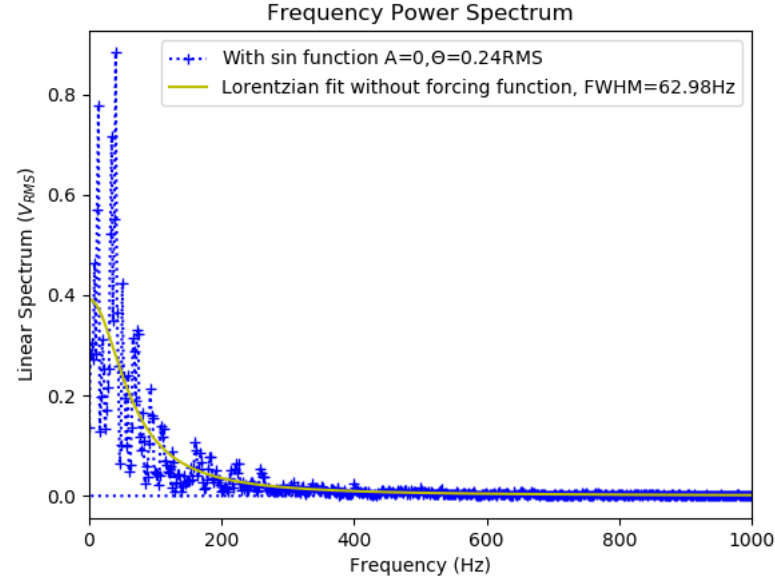
- ADALM2k

- Google Docs
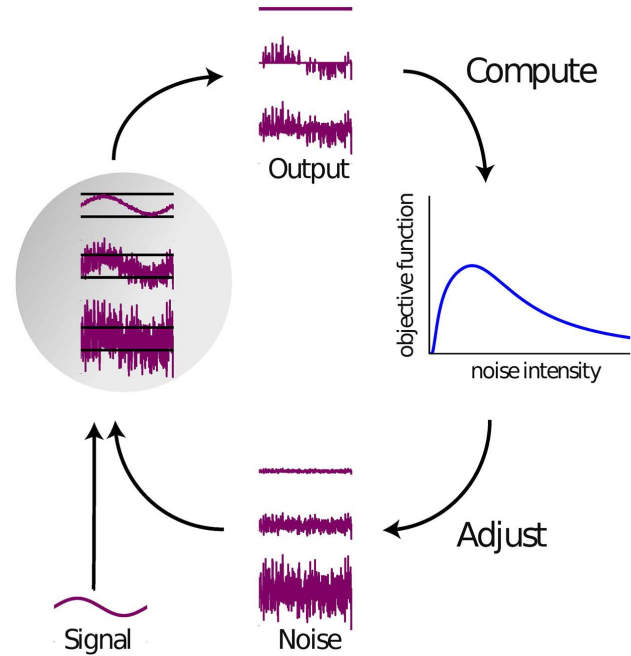
LTspice circuit simulation
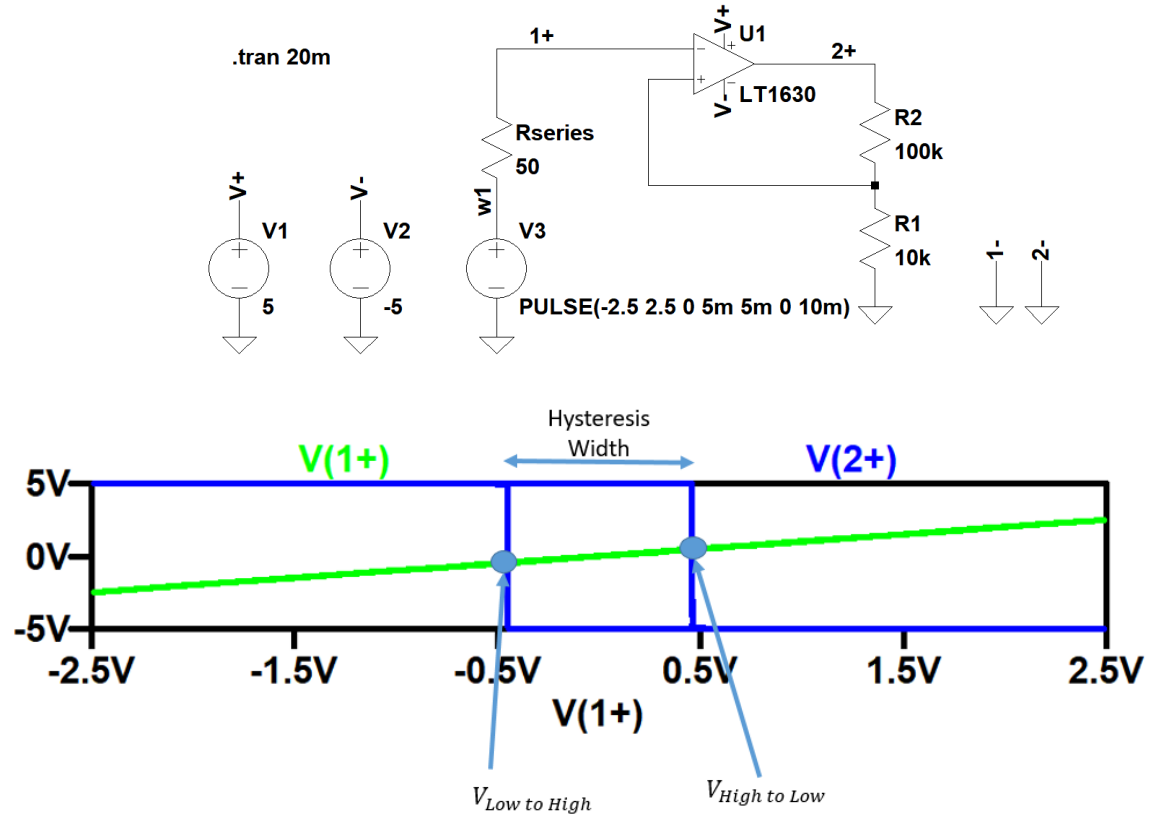
ADALM2k Electrical Test Syste

- $800k for ME, COMPE and EE Departments for kits.

- Federal Funds

- Reposed student fees

- Philanthropic TI gift

- Charles W.

Data Analysis with Python

- Numpy
- Matplotlib
- Sympy

Frequency Power Spectrum

- - -+ With sin function A=0,Θ=0.24RMS
- — Lorentzian fit without forcing function, FWHM=62.98Hz

X axis: Frequency (Hz)
Y axis: Linear Spectrum (V_{RMS})

Communication/Project Management tasks

- Google Sheets for project manager
- Google Docs for written collaborat
- Google Slides for oral communicat

Schmitt Trigger:
Stochastic Resonance
(250Hz)

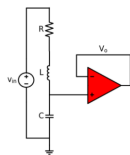Stephanie Riley, Celeste Avila Salcido, Jules Fagbemiro, Kaung Kyaw, Ryan Wicklund
TA: Elisa Parent

Title of the project

Abstract

Theory

Silicon neurons have been studied since 2011[10.1109/IEMBS.2009.5332655]

|	A	B	C	D	
		Who	When	Status	Link
	Abstract			Draft	https://docs.goo
	Theory			Ready for Review	https://docs.goo
	Lit Review			Final	
	Results				https://docs.goo

OCP
FUTURE
TECHNOLOGIES
SYMPOSIUM

Using [Myopenmath](#) for formative assessments

The circuit values for the passive components in the circuit shown below are: $R_1 = 20\ k\Omega$, $C_1 = 5\ nF$, $R_2 = 20\ k\Omega$, $R_3 = 180\ k\Omega$ Assume that the OPAMP shown is ideal and that the power supplies are appropriately scaled.
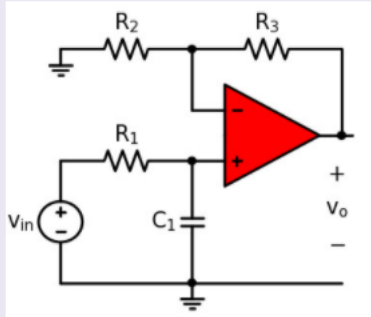
The transfer function $H(s) = \dfrac{V_o(s)}{V_{in}(s)} = \boxed{}$

Draw the magnitude of $H(s)$.

Magnitude (dB)

$\omega(r/s)$
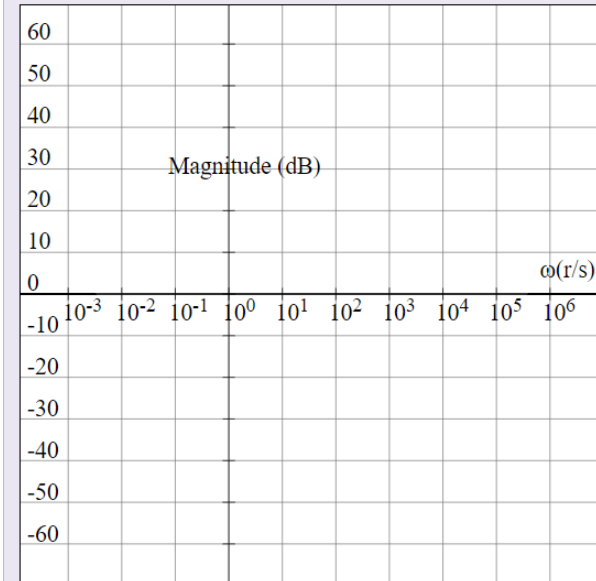
Empathy with students in a remote leaning environment

- Online courses can be frustrating.

- Mastery mixed martial arts test
  - As a student
  - As a teacher

- Technology issues Test taking panic using automated remote proctoring services.

- Authentic tasks in the exam. take home exams, unique problems.

- Loneliness?

Metrics

- Student complaints
- Code reuse
- Ease of learning
- Cost to run

Future of work

- What is the nature of work in the future?

- Potential collaboration.

- Come to know us and then hiring can be easier.

- Change nature of hiring?

- Face to face rare?

OCP

FUTURE
TECHNOLOGIES
SYMPOSIUM