

July 30, 2019

Announcements

July 30, Tuesday, noon: Optional - Womens Career Mentoring Lunch

August 8, Thursday, noon: Optional – Perfect Pitch Contest

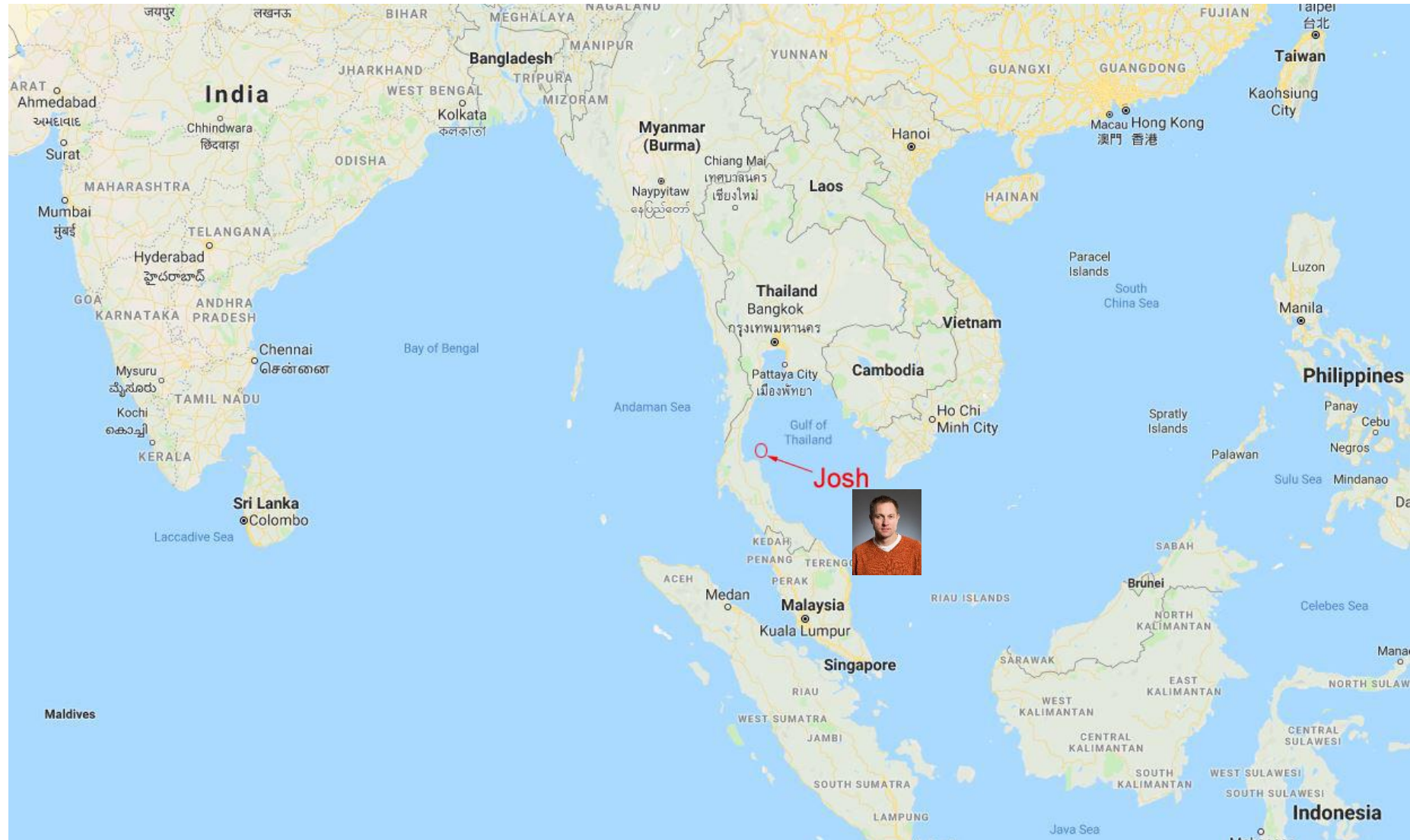
August 9, Friday: Rough draft of poster due

August 14, Wedn, noon: Final Poster Due

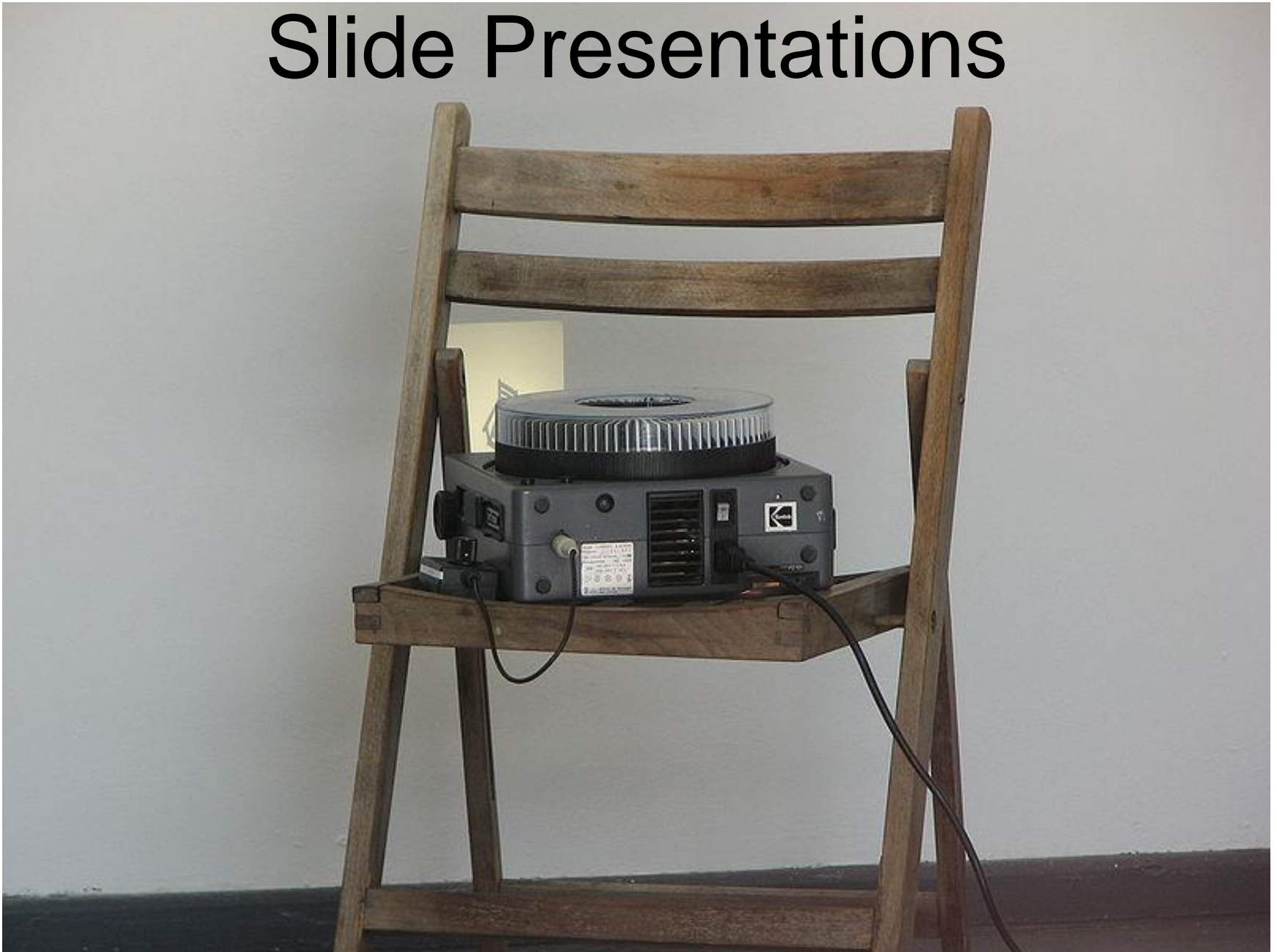
August 3-4: Seafair Weekend (Fleet Week; Hydroplanes, Blue Angels)



Josh Patrick: Away until August 14



Slide Presentations



<https://youtu.be/nSGqp4-bZQY?t=6s>

The worst talk ever?

Compare to Dr. Chet Moritz (last week's speaker)



Elements of a Good Talk

Content

- Informative
- Interesting
- Important

Style and Delivery

- Professional
- Enthusiastic
- Friendly and approachable
- Tells a story

Clarity and Organization

- Points build, lead to conclusion
- No distracting “extras”
- Avoids jargon
- Doesn’t run over time

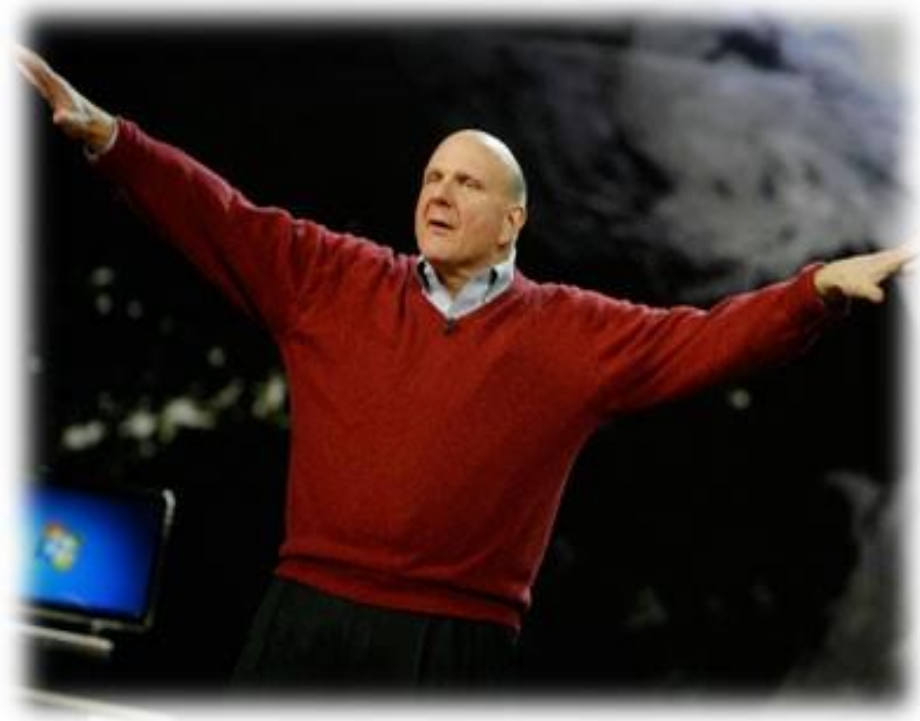
Expertise

- Credible
- Able to answer questions

Adapted from Susan McConnell, Stanford University

Stage Presence

- Talk to the audience
- Make eye contact
- Vary your voice and tone
- Let your personality come through
- Don't laugh at your own jokes
- Move and Gesture
- Be aware of where you are standing
- Be confident
- Relax
- Smile



Speaking Voice

- Enunciate
- Project
- Pace yourself
- Emphasize key points
- Don't sound scripted
- Breathe



Organize

- Introduce yourself and your topic
- Frame your talk with motivation
- Build to your conclusions – don't include extraneous data/figures
- Work on smooth segues
- Explain why your results are new, interesting and important



Format

- Introduction
- Methods
- Results
- Conclusions
- Acknowledgements



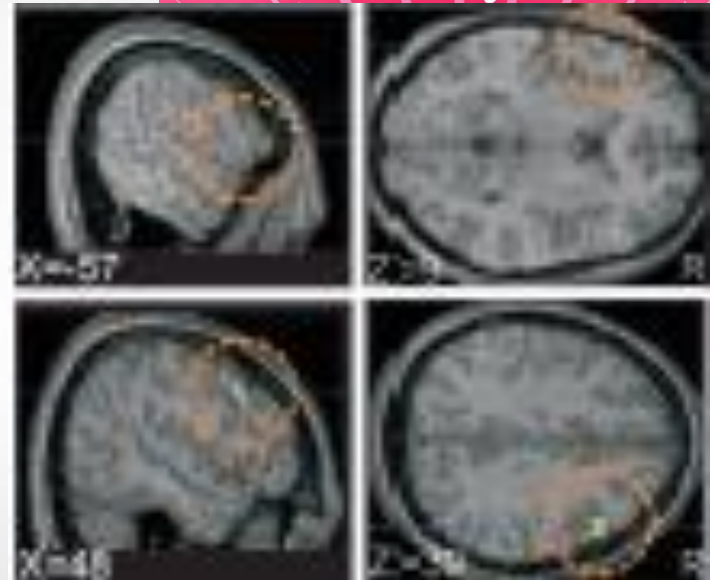
Making Slides: Things to Do

- Choose your background and theme wisely
- Keep it simple
- Use more graphics, less text
- Be judicious with bullets
- Explain everything on your slide
- Use movies when appropriate
- Check your spelling
- Have extra slides ready



MAKING SLIDES: THINGS TO AVOID

- ❖ Fancy animations
- ❖ Clip art
- ❖ Unrelated content
- ❖ Low resolution images
- ❖ Unreadable text
- ❖ Unlabeled figures
- ❖ “Raw” figure edges
- ❖ Sound effects



Fonts

Do not get creative

Or fancy

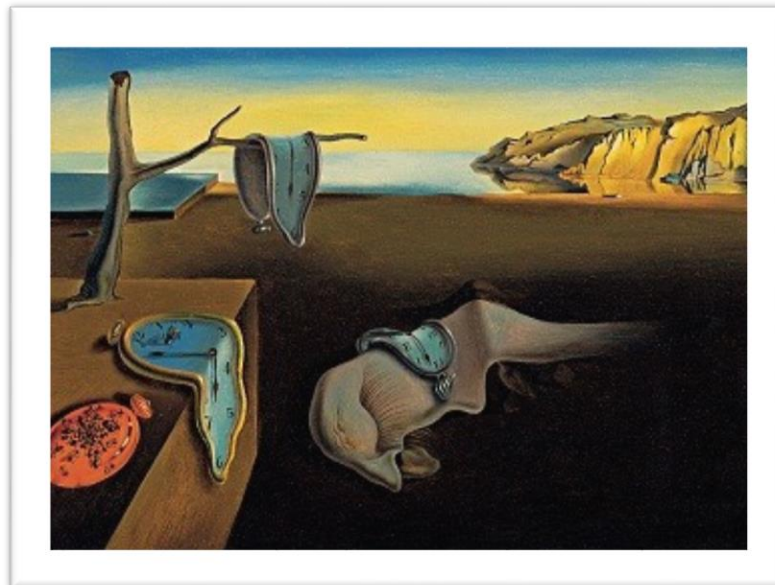
This is a scientific presentation

You will only appear amateur

Use 18 point or larger

Time

- Fill your time
- Don't go over time
- Allow time for questions



What to Wear

MATLAB-Based Circuit Models for Integrated Neural Stimulation Electronics
 Emerson Reynolds¹, Eric Pappas¹, Jacques C. Rudolph¹
¹Department of Electrical Engineering, University of Washington, Seattle, WA
²San Diego State University, San Diego, CA

Introduction
 The objective of this project is to create circuit models that allow researchers to design and test neural stimulation electronics before building physical prototypes. This approach can save time and money by identifying design errors early in the development process. The models will be used to evaluate the performance of various circuit topologies and to optimize the design for power consumption, area, and performance.

Methods
 The models were developed using MATLAB/Simulink and were validated against experimental data. The models include a detailed representation of the neural tissue and the stimulation electronics. The models were used to evaluate the performance of various circuit topologies and to optimize the design for power consumption, area, and performance.

Results and Discussion
 The models were used to evaluate the performance of various circuit topologies and to optimize the design for power consumption, area, and performance. The results show that the models can accurately predict the performance of the electronics and can be used to optimize the design.

Brain Computer Interface (BCI)
 The BCI system consists of a neural interface, a processing unit, and a control unit. The neural interface is used to record neural activity and to deliver stimulation. The processing unit is used to process the neural data and to generate control signals. The control unit is used to control the stimulation electronics.

CMOS Stimulator Design
 The CMOS stimulator design was developed using MATLAB/Simulink and was validated against experimental data. The design includes a detailed representation of the neural tissue and the stimulation electronics. The design was used to evaluate the performance of various circuit topologies and to optimize the design for power consumption, area, and performance.

Proposed Solution
 The proposed solution is a MATLAB-based circuit model for integrated neural stimulation electronics. The model is used to evaluate the performance of various circuit topologies and to optimize the design for power consumption, area, and performance.

Benefits of MATLAB Modeling
 The benefits of MATLAB modeling include the ability to quickly prototype and test circuit designs, the ability to optimize the design for power consumption, area, and performance, and the ability to identify design errors early in the development process.

Integrated Sensing of Depth Camera and Electromyography for Human-Computer Interaction
 Marissa Dominguez¹, Justin Thompson¹, Bingui Brunton¹, Thomas L. Daniel²
¹Cleveland High School, ²Department of Biology, University of Washington, Seattle, WA

Abstract
 This project aims to enhance the interaction between humans and computers by integrating depth camera and electromyography (EMG) data. The system is designed to recognize hand gestures and muscle activity to control a computer interface.

Methods
 The system consists of a depth camera, an EMG sensor, and a computer. The depth camera is used to capture hand gestures, and the EMG sensor is used to capture muscle activity. The computer processes the data and controls the interface.

Results
 The system was able to recognize hand gestures and muscle activity with high accuracy. The system was used to control a computer interface, and the results show that the system can be used to enhance human-computer interaction.

Discussion
 The system was able to recognize hand gestures and muscle activity with high accuracy. The system was used to control a computer interface, and the results show that the system can be used to enhance human-computer interaction.

References
 [1] ... [2] ... [3] ...

Effects of a concurrent cognitive task on walking over an unpredictable foam surface in people with lower limb loss: a pilot study
 Naomi Schwartz¹, Valerie Kelly, PT, PhD², Brian Haffner, PhD³, Sara Morgan, LCOPO²
¹1. Kees Science Dept., Pitzer College, Claremont, CA, ²2. Rehabilitation Medicine, University of Washington, Seattle, WA

Introduction
 People with lower limb loss (LLL) often experience difficulties when walking on unpredictable surfaces. A concurrent cognitive task may further impair walking performance. This study aims to investigate the effects of a concurrent cognitive task on walking over an unpredictable foam surface in people with LLL.

Methods
 The study involved 10 participants with LLL. They walked on a foam surface while performing a concurrent cognitive task. The walking speed and accuracy were measured.

Results
 The results show that the concurrent cognitive task significantly impaired walking performance on the foam surface. The walking speed and accuracy were significantly lower when the cognitive task was performed.

Discussion
 The results suggest that a concurrent cognitive task can impair walking performance on an unpredictable surface. This finding has implications for the design of assistive devices and rehabilitation programs for people with LLL.

Conclusion
 The study found that a concurrent cognitive task significantly impaired walking performance on an unpredictable foam surface in people with LLL. This finding highlights the importance of considering cognitive factors in the design of assistive devices and rehabilitation programs.

Multi-channel Signal Acquisition for Wearable Devices
 Jamal Thorne¹, Undergraduate, Computer Science, University of Washington, Seattle, WA
 Omar Zaky², PhD Student, Electrical Engineering, University of Washington, Seattle, WA
 Matt Reynolds³, Assistant Professor, Department of Electrical Engineering, University of Washington, Seattle, WA

Abstract
 As wearable technology becomes more prevalent, the demand for multi-channel signal acquisition systems increases. This paper presents a multi-channel signal acquisition system for wearable devices.

Application Structure
 The system is designed to acquire multiple channels of signal from wearable devices. The system consists of a multi-channel signal acquisition unit and a processing unit.

Sample Output
 The system was able to acquire multiple channels of signal from wearable devices. The sample output shows the acquired signals and the processed data.

Background
 This work is a part of a larger project that aims to develop a multi-channel signal acquisition system for wearable devices. The system is designed to acquire multiple channels of signal from wearable devices and to process the data.

Figure 1: The Hardware System
 The hardware system consists of a multi-channel signal acquisition unit and a processing unit. The acquisition unit is used to acquire multiple channels of signal from wearable devices, and the processing unit is used to process the data.

<https://youtu.be/MjcO2ExtHso>

PPT Comedy Routine

The number one rule:

Practice

https://www.ted.com/talks/hugh_herr_the_new_bionics_that_let_us_run_climb_and_dance?language=en

Hugh Herr TED Talk