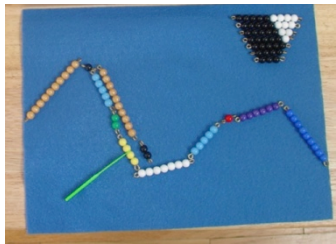
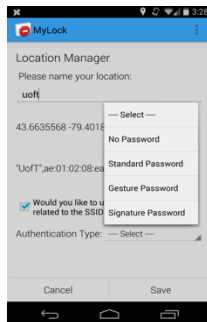
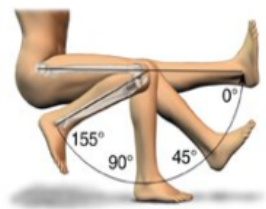
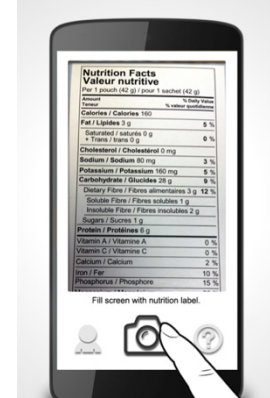


ECE 1778: Creative Applications for Mobile Devices



Lecture 13
April 9, 2014



Today

1. Thank yous, introductions
2. News
3. Final Reports
4. What's Next
5. Final Presentations, Part 2



Thank You

- To Huawei, for the donation of many Huawei Ascend P6 Smartphones
 - As you'll see these are widely used in today's demonstrations, and made a big difference to the results in the course
 - Laura Markle from Huawei asks if you will permit a photo of you with your devices



Thank You

- To Arshia Tabrizi, B.A.Sc., P.Eng., Esq.
 - For a donation to this course & moral support
 - Permitted the purchase of external sensors and display equipment used in the presentations



Thank You

- To Matthieu Gagne (& Faculty of Engineering)
 - For hard work in recording and editing the final presentations!



(5)

News & Analysis

MEMS Mics Pass \$1B Milestone

R. Colin Johnson

4/2/2014 07:01 PM EDT

8 comments

NO RATINGS

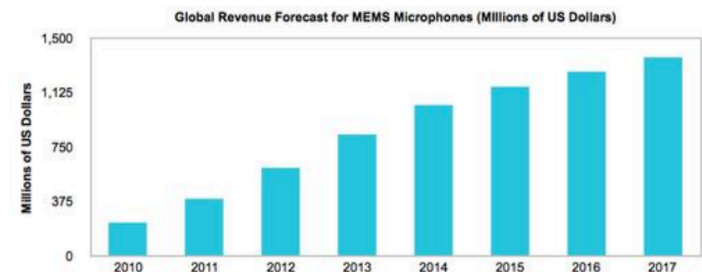
1 saves

[LOGIN TO RATE](#)

PORTLAND, Ore. — The market for micro-electro-mechanical system (MEMS) microphones will top \$1 billion in 2014 for the first time, up 24% from \$837 million in 2013, according to [IHS Technology](#) in El Segundo, Calif.

And although its growth rate is slowing it will maintain a five-year compound annual growth rate (CAGR) of 18% until 2017 when it will top \$1.37 billion, according to IHS. [Yole Développement](#) cites similar slowing growth rates, predicting a 13% CAGR out to 2019 when the market will top \$1.65 billion.

Driving growth today, both reports claim, is the wide adoption of MEMS microphones in mobile devices, especially smartphones and tablets, which are currently using multiple MEMS microphones to cancel ambient noise, to provide high-definition (HD) audio quality for video recordings and to improve the accuracy of voice command functions. Burgeoning new markets for MEMS microphones include Internet of Things (IoT), medical and wearable devices -- including smart watches and smart glasses -- but the top buyers of multiple MEMS microphone set-ups today are smartphone and tablet vendors -- principally Apple and Samsung.



MEMS microphone market tops \$1 billion for first time in 2014 -- and is on-track for \$1.37 billion by 2017. (SOURCE: JHS)

The Schedule

1. Today: Final Presentations
2. Final Report Due Thursday April 10th
 - at 6pm. 1 Mark off for every hour late
 - Submit to 'Assignment' Final Report
 - All groups include Source Code (your property, we can check)
3. Pub Night: Wednesday April 16th
 - 5-8pm, Faculty Club Pub – 41 Willcocks Street, downstairs
 - All welcome for post-class hobnobbing and discussion
 - All grades handed in by then
 - On me!



Final Report

Due Date, Contents



Final Report

- **Due Date: April 10th (Thursday)**
 - Tommorrow
 - Grades will be done by Monday

- **Maximum 2000 words**
 - Docked 5% of final report grade for every 10 words over 2000, or proportionate therein
 - Report must include word count in document
 - Minimum font size 12 points
 - Pictures & words in pictures not counted

- **500 extra words for groups with Appers (i.e. total 2500)**



Final Report Content

1. Introduction

- What & why – includes Apper context

2. Overall Design

- Block diagram, description of each part
- Describe how it works, if not obvious (e.g. signal processing)

3. Statement of Functionality & Screen Shots from App

- Did it work? Describe & show parts that worked
- For parts that did not work, describe & speculate as to why

4. What did you learn - what would you do differently?



Final Report Content

5. Contribution by Group Members

- Describe what each group member did in project

6. Apper Projects: Apper Context

- 500 words, separate from main word count
- Describe how what was achieved can influence your research field, or the field of application.
- Must be written by the Apper only if one in group

7. Future Work

- How could the app be augmented to make it better?
- Suggest additional features and capabilities

- Let me know if OK to post video, report and/or source code on web (or not).



What Next?



Notes on What Happens Next

1. Please consider putting your App on an App Store
2. Please consider allowing us to post your source code for public use (with credit to you) if you don't plan to move it forward
3. If you want to continue to work on this collaboratively, consider apply to join it to my new research Centre:
 - 'The Center for Inter-Disciplinary Mobile Software and Hardware'
 - <http://www.eecg.utoronto.ca/~jayar/CIMSAH/>



The Centre for Inter-Disciplinary Mobile Software and Hardware

In the University of Toronto

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The goal of this research centre is to explore and develop high-impact applications of mobile technology in a range of disciplines, bringing together people capable of programming these devices with others who can make new and novel uses of them.

Final Presentations/Demo Today



Final Presentations

- **Maximum 8 Minutes**
- **New Note: please introduce yourself and your field(s)**
- **Must be self-contained**
 - Describe motivation/goal
 - Overall Design & Method
 - Demo
 - **Key Learning** - What you'd do differently if starting again
 - **Future Work** – additional capability/features if work was to continue

- **Just a few minutes for questions**



Final Presentations Last Week

#	Project
1	Positive Snake
2	Commuter Rail Parking Information
3	StudiBuddies
4	Asteria
5	Surgical Trainer and Navigator
6	Acoustica
7	Maintenance Agent
8	MyLock



Final Presentations Today

#	Project
9	MyKnee
10	Speech Coach
11	MyAlly
12	Lense Meter
13	Critter
14	Nutrition Label Facts
15	Face2Name
16	Baton
17	WorldyMobile

