

Steve Jones  
August 21st, 2015  
499Y Semester Plan

## 1. STATEMENT REGARDING THE GOAL OF THE THESIS OR PROJECT

I'm a student who is passionate about building beautiful software. I discovered this passion early in high school and decided I would go to UMass and study computer science in order to learn how to build software. The majority of my courses at UMass have focused on theory and basic implementation but I have had little opportunity to learn and develop skills to design and build elegant software. I am excited to take advantage of this honors project as an opportunity to fulfill this experience.

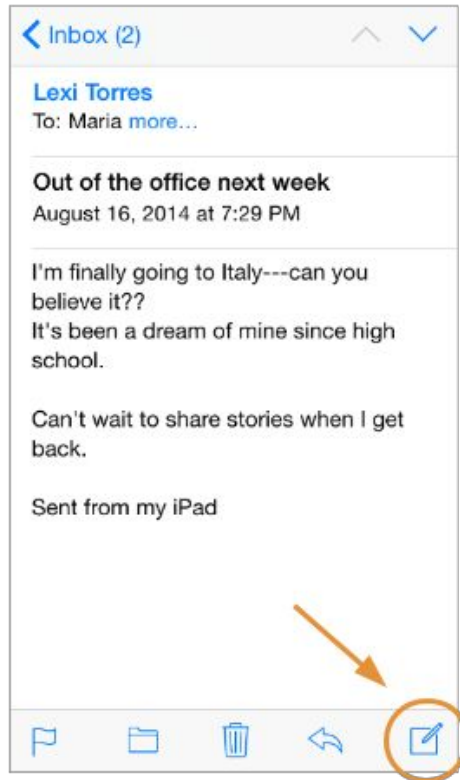
I am hoping to start my career in the field of software engineering, specifically as a User Experience Developer. After graduating from UMass I would like to attend graduate school to obtain a master's degree in User Experience (UX) or Human-Computer Interaction (HCI). This project is the ideal opportunity for me to build upon my UX career skills while also developing myself into a better candidate for UX/HCI graduate programs. I hope to produce materials that I can submit with my graduate school applications that demonstrate my UX/HCI abilities.

Growing up in an era of design revolutions lead by companies such as Apple and Google are what lured me into this field. With the release of the iPhone in 2007 a revolution of design ignited. Concepts such as touch-based user interface design and "mobile first design" have developed. Products such as the tablets and wearables continue to evolve design. Mobile design is still a young field and there is much to research and explore.

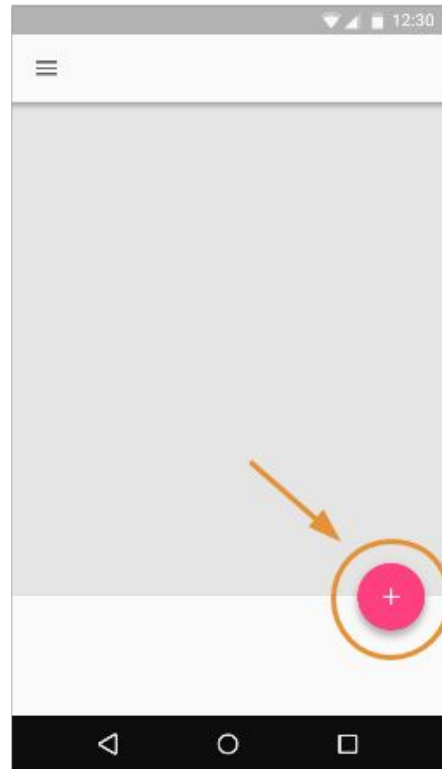
I have always been very interested in how companies build and style their products. The user experience principles and design guidelines that companies follow help define their products and the company as a whole. The culmination of all the design decisions these companies make are enough for their users to develop intense emotional feelings or allegiance to a company or a product. There are people who are devout Apple fans and there are others who swear allegiance to a company like Microsoft or Google. The design identities of these companies are so impactful that they can cause people to be connected enough to a company's product that they will have intense arguments to support it over a competitor.

For my honors project I am going to explore the differences and similarities between the mobile design guidelines of Apple and Google. I will design and develop two mobile applications. One following the principles Apple's iOS design guidelines and the other will follow those of Google's material design guidelines. Both applications will be designed with the same purpose and core functionality, however each will have distinct differences native to their respective human interface principles.

After designing and building each application, I hope to perform A/B testing on specific features of the application. For example I will test the user experience of a feature such as “Compose New Message”. The iOS application will be designed to complete this action using its native compose button (Image 1), whereas the Android application will use its Floating Action Button (FAB) component (Image 2).



**Image 1**



**Image 2**

This experience of designing and building mobile applications, researching design guidelines and user experience principles, as well as performing and deciphering user tests will be the ultimate experience to prepare me for graduate school and my career.

## 2. KEY READINGS

### PRIMARY READING

Apple

#### iOS Human Interface Guidelines

<https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/MobileHIG/index.html>

Google

**Material Design**

<https://www.google.com/design/spec/material-design/introduction.html>

Nielsen Norman Group - Jakob Nielsen

**Usability 101: Introduction to Usability**

<http://www.nngroup.com/articles/usability-101-introduction-to-usability/>

Nielsen Norman Group - Christian Rohrer

**When to Use Which User-Experience Research Methods**

<http://www.nngroup.com/articles/which-ux-research-methods/>

Nielsen Norman Group - Raluca Budiu

**The State of Mobile User Experience**

<http://www.nngroup.com/articles/mobile-usability-update/>

How Many Test Users in a Usability Study?

Nielsen Norman Group - Jakob Nielsen

Usability.gov

**Planning a Usability Test**

<http://www.usability.gov/how-to-and-tools/methods/planning-usability-testing.html>

Usability.gov

**Recruiting Usability Test Participants**

<http://www.usability.gov/how-to-and-tools/methods/recruiting-usability-test-participants.html>

Usability.gov

**Recruiting Participants & the Legend of “General Public”**

<http://www.usability.gov/get-involved/blog/2015/07/recruiting-participants.html>

Usability.gov

**Running a Usability Test**

<http://www.usability.gov/how-to-and-tools/methods/running-usability-tests.html>

Usability.gov

**Reporting Usability Test Results**

<http://www.usability.gov/how-to-and-tools/methods/reporting-usability-test-results.html>

Tim R. Todish

**Not Your Parent’s Mobile Phone: UX Design Guidelines For Smartphones**

<http://www.smashingmagazine.com/2011/10/not-your-parents-mobile-phone-ux-design-guidelines-smartphones/>

## **ADDITIONAL READING**

The following books will also be used as resources. I may not read them fully but I will go through each and find anything relevant and helpful to my project. If I find the book is not very useful I will just read relevant parts. If I find it very useful I will read the complete book thoroughly.

Steve Krug

### **Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability**

[http://www.amazon.com/Dont-Make-Think-Revisited-Usability/dp/0321965515/ref=asap\\_bc?ie=UTF8](http://www.amazon.com/Dont-Make-Think-Revisited-Usability/dp/0321965515/ref=asap_bc?ie=UTF8)

Steve Krug

### **Rocket Surgery Made Easy: The Do-It-Yourself Guide to Finding and Fixing Usability Problems**

[http://www.amazon.com/Rocket-Surgery-Made-Easy--Yourself/dp/0321657292/ref=asap\\_bc?ie=UTF8](http://www.amazon.com/Rocket-Surgery-Made-Easy--Yourself/dp/0321657292/ref=asap_bc?ie=UTF8)

Jeff Johnson

### **Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules**

<http://www.amazon.com/Designing-Mind-Simple-Understanding-Interface/dp/012375030X?&tag=rnwap-20>

Don Norman

### **The Design of Everyday Things**

[http://www.amazon.com/The-Design-Everyday-Things-Expanded-ebook/dp/B00E257T6C/ref=dp\\_kinw\\_strp\\_1](http://www.amazon.com/The-Design-Everyday-Things-Expanded-ebook/dp/B00E257T6C/ref=dp_kinw_strp_1)

Don Norman

### **Emotional Design: Why We Love (or Hate) Everyday Things**

<http://www.amazon.com/Emotional-Design-Love-Everyday-Things/dp/0465051367>

Ben Shneiderman, Catherine Plaisant, Maxine Cohen, Steven Jacobs

### **Designing the User Interface: Strategies for Effective Human-Computer Interaction**

<http://www.amazon.com/Designing-User-Interface-Human-Computer-Interaction/dp/0321537351>

Gerard Jounghyun Kim

### **Human-Computer Interaction: Fundamentals and Practice**

<http://www.amazon.com/Human-Computer-Interaction-Fundamentals-Gerard-Jounghyun/dp/1482233894>

## **3. COMMUNICATION**

**How often will you meet with your Committee Chair?**

- In-person meeting with both Professor Richards (Chair) and Professor Hudlicka (Second Committee Member) together twice over semester
- Meet weekly with a committee member - with Professor Richards weeks when focussing on research of software development, with Professor Hudlicka weeks when focussing on HCI
- Communicate via email with both committee members upon each deadline

**What are your Committee Chair's expectations of such meetings?**

- Display results of research
- Report on progress

**What time commitment is expected to be applied to your research between meetings with your Committee Chair? (For example, 10 hours of work per week.)**

- 9 hrs/week

**4. SPECIALIZED TRAINING**

I have never developed an iOS or Android application, so as part of my research I will have to learn how. I will do this using online tutorials such as Lynda.com. I am proficient in Java but I will have to learn the Swift or Objective-C programming language for iOS development.

**5. TIMELINE****Monday, October 26th**

- Completion of Primary Reading
- Notes of information from the readings relevant to this project

**Monday, November 16th**

- Decision of what type of application to make in order to best test the differences between Apple & Google's design guidelines
- Completion of "Additional Reading" as described in the Additional Reading section
- Notes of information from the readings relevant to this project

**Monday, November 30th**

- Decision of what type of application to make in order to best test the differences between Apple & Google's design guidelines
- First draft of 499P Proposal

**Friday, December 11th**

- 499P Proposal and Contract submission