CURRICULUM VITAE

Toni Marie Kaplan

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Education:

Carnegie Mellon University
Human-Computer Interaction Institute
Completed one year of studies in pursuit of PhD, 2017-2018
Advised by Professor Jeffrey P. Bigham.

University of Maine, B.A. 2017, New Media (3.9 GPA)
Minors: Computer Science and Human-Computer Interaction
Honors: Dean's List (All Semesters)

Work Experience:

Fall 2017 - Summer 2018	Carnegie Mellon University BIG Lab Graduate Research Assistant
Fall 2014 – Summer 2017	Virtual Environment and Multimodal (VEMI) Laboratory, UMaine Student researcher and X-Dimensional Renderer
Summer 2016	ClickAndGo Wayfinding Maps Route phrasing consultant for non-visual navigation application
Spring 2016	Student Disability Support Tech Assisted and Tutored Paraplegic Student in New Media
Summers 2010 - 2013	Kittery Trading Post Frappe Shack Alternated between cashier and cook

Conferences and Publications:

April 2018 Megan Hofmann, Toni Kaplan, Kristen Williams, Gabriella Hann, Stephanie Valencia, Scott E. Hudson, Jennifer Mankoff and Patrick Carrington
"Occupational Therapy is Making": Design Iteration and Digital Fabrication in Occupational Therapy"
Submitted to ASSETS 2018. Awaiting feedback.

March 2018 Raymond Perry, Toni Kaplan, Nicholas Giudice

“Conveying Topographic Information with 3D Printed Models and Tactile Maps” International Conference on Spatial Cognition 2018. Accepted Poster Presentation.

March 2018 Benjamin Guenther, Nicholas Jensen, Brad Butler, Kaitlyn Haase, Toni Kaplan and Nicholas Giudice
“Comparison of Learning with Vibro-audio Maps vs. Traditional Tactile Maps” International Conference on Spatial Cognition 2018. Accepted Poster Presentation.

March 2018 Nicholas Jensen, Walter Ramussen, Toni Kaplan, Stacy Doore and Nicholas Giudice
“What’s Up: Comparing North-up vs. Forward-up Haptic Interfaces for Nonvisual Navigation of Indoor Routes” International Conference on Spatial Cognition 2018. Accepted Poster Presentation.

March 2018 Toni Kaplan, Susumu Saito, Kotaro Hara, Jeffrey P. Bigham
“Striving to Earn More:A Survey of Work Strategies and Tool Use Among Crowd Workers”
Full paper accepted into AAAI Conference on Human Computation and Crowdsourcing 2018

Feb. 2018 Toni Kaplan, Nicholas Giudice, and Benjamin A. Guenther (in preparation)
“Development and Evaluation of a Mobile-Phone Based Multisensory Interface To Provide Access to Diagrams for Blind and Low Vision Students” (paper is nearing completion)

April 2017 Nicholas A. Giudice and Toni M. Kaplan
“Evaluation of Multimodal Scene Access Interfaces Supporting Spatial learning and Navigation” American Association of Geographers Annual Meeting Poster Abstract

May. 2017 Nicholas A. Giudice, Toni M. Kaplan, Shane M. Anderson, Robert J. Knuesel, Joseph Cioffi, and Benjamin A. Guenther “Evaluation of a smartphone-based navigation system for blind and visually impaired travelers using narrative descriptions and digital beacons” (In Revision)

Nov. 2016 Kaplan, Fortier-Brown, Bennett and Giudice “Evaluation of Virtual Reality Simulation as a Supplemental Treatment in Cases of Seasonal Affective Disorder” Psychonomic Society's 57th Annual Meeting, Poster Presentation

March 2016 Kaplan, Fortier-Brown, and Giudice
“Evaluation of Virtual Reality Simulation as a Supplemental Treatment in Cases of Seasonal Affective Disorder” Poster Presentation at UMaine Research Symposium At Bangor Cross Insurance Center.

Awards, Fellowships and Grants:

2016-2017 Undergraduate Research and Creative Activity CLAS Fellowship
“Development of a Dynamic Multisensory Interface To Provide Accessible Biological Diagrams for Blind and Low Vision Students ” ($900) Developing an application for accessible, smartphone-based educational diagrams in STEM disciplines

2015-2016 Undergraduate Research and Creative Activity CLAS Fellowship
"Evaluation of Virtual Reality Simulation as a Supplemental Treatment in Cases of Seasonal Affective Disorder" ($900), comparing traditional and a novel VR-based mitigation for SAD

Fall 2015 Honorary of the University of Maine IMFA program to attend the Haystack Mountain School of Craft Art Schools Collaborative Session

2015 Spring University of Maine New Media Microgrant ($100)
Used to purchase materials for interactive Javascript project

2014-2017 UMaine Flagship Scholarship Merit Scholarship Recipient ($20,000 over 4 yrs)

2015-2016 Jacobson-Loring Art Fund ($1,308)

Public Outreach Events:

July 2016 VEMI Virtual Reality Demonstration at Thomasville Public Library
Led two-hour interactive presentation to 20 middle school students.

April 2016 University of Maine Accepted Students Day
Talked to incoming students about research opportunities at UMaine

March 2016 Maine Science Festival VEMI Exhibition
Presented and 3D Modeled Live on Stage to audience of approximately 2,500 members of the public.

Dec. 2015 Blue Hill Teen Science Cafe
Presented VEMI Demos and Research to Teens interested in STEM fields

March 2015 Maine Science Festival VEMI Exhibition
Assisted in running over a 4,500 people through VR demos.

Fall 2014 - Present VEMI Lab Tours
Contributed to numerous tours of the lab and current projects, averaging 8,000 people per year.

Lectures and Teaching Experience:

Spring 2017 Teaching Assistant
Collaboratively designed and co-taught graduate level class on human-computer interaction.

2016-2017 Computing Learning Assistant
Collaboratively designed and 2017 Teaching assistant for a six week module on data visualization in virtual reality for beginning programmers.

Fall 2016 Teaching Assistant
Collaboratively designed and co-taught graduate-level class on virtual reality research and applications.

June 2016 Introduction to Blender with Upward Bound Students at UMaine
Taught Blender and 3D modeling concepts and techniques to 15 Upward Bound high school students.

March 2016 Maine Science Festival Tech Night At the Bangor Discovery Museum
Introduced children ages 8-14 to principles of coding and physical computing with Arduinos.

March 2016 4H @ UMaine Girls In Technology Unity Workshop at VEMI
Led workshop teaching Unity 3D game engine to group of twenty middle school girls

Dec. 2015 Blue Hill Teen Science Cafe
Presented VEMI Demos and Research

Fall 2014-Present New Media Tutoring
Informally led tutoring groups and offered 1-on-1 tutoring to New Media students as needed. Tutored various New Media students in Adobe software, physical computing, and prototyping methods.

Relevant Coursework:

Fall 2016 Virtual Reality: Research and Applications
Contributed to class design and lectures. Discussed the role of cognition and perception in relation to VR and its use in research, training, education and other applications.

Summer 2016 SIE 598 Information Access Technology
Worked toward developing an interface to research the efficacy of map learning via audio-haptic means as a tool for learning and navigating a real world space.

Spring 2016 SIE 515 Human Computer Interaction
Learned concepts of UX with emphasis on aspects of human perception, cognition, and learning. This course provided an overview of interface design, usability evaluation, universal design, and multimodal interfaces.

Spring 2016 NMD 342 Interactive Design & Physical Computing
Focused on creating seamless intuitive physical interactions that reflected existing mental models of the task at hand.

Fall 2015 NMD 430 Advanced Rapid Prototyping
Refined existing prototyping skills and learned new approaches, including algorithmically generated 3D modeling, CNCing and polyjet-based 3D printing.

Fall 2015 NMD 442 User Experience Design
Studied UX methodologies and deliverables. Collaboratively developed user personas, use cases, interface storyboards, and low and high fidelity prototypes.

Summer 2015 NMD 206 Project Design Workshop II

Worked with Bangor Discovery Museum to design, prototype and propose a museum exhibit. Focused heavily on target audience analysis and intuitive interaction mechanisms. Used a modified scrum framework in project groups for the duration of the course.

Notable Projects and Research:

Fall 2016 - May. 2017 Multimodal Diagram System

Developed an application for accessible, smartphone-based educational diagrams in STEM disciplines. Created web interface to facilitate easy diagram design and deployment for this system. Conducted user studies involving 20 sighted participants and 10 BVI participants. Related paper, “Development and Evaluation of a Mobile-Phone Based Multisensory Interface To Provide Access to Diagrams for Blind and Low Vision Students” is nearing completion.

Summer 2016 - Spring 2017 Cognitive Map Transfer Study

Worked on developing an Android application for displaying haptic maps. Led team with two VEMI coworkers (Brad Butler, Nick Jensen) to design a research study to evaluate how effectively people are able to learn layouts via haptic maps and utilize this information to find objects in a real world space. All participants have been run for this study and it is expected to be written up written up in Early 2018.

Fall 2016 - Jan. 2017 Indoor Navigation Study At Teacher’s College in New York

Helped run a sample of both sighted participants and blind participants through a study evaluating the use of a real-time audio route description interface supplemented with location-specific iBeacon information. A journal paper for this research has been submitted. See “Evaluation of a smartphone-based navigation system for blind and visually impaired travelers using narrative descriptions and digital beacons” under Conferences and Publications.

Mid 2016 Haptic Scene Access Interface

Worked with VEMI coworker Sam Gates to create an audio/haptic interface to help people locate objects within a room. Assisted in designing and running a study to evaluate the efficiency of two different interface designs. A journal paper for this research is currently in preparation. See “Evaluation of Multimodal Scene Access Interfaces Supporting Spatial learning and Navigation” under Conferences and Publications.

Spring 2016 AngryBots: An exploration in Mob Mentality

Created a small Arduino micro-controller based robot that communicated with other, unique, robots created by additional group members. Each robot’s “anger” level was stimulated by different interactions. Individual robot’s levels contributed to the overall anger of the group, which would exponentially rise until the entire group reached critical levels. This was project was designed as a tangible and interactive demonstration of the mechanism of mob mentality.

Spring 2016 FLOW Light & Projection Show At The Bangor Thomas Hill Standpipe

Programed a Neopixel lighting effects interface to be utilized live during the FLOW Light & Projection Show Presented by the UMaine Coaction Lab.

May 2015 Bangor Discovery Museum Exhibit Prototype

Designed and prototyped a children's educational exhibit in collaboration with Bangor Discovery Museum. This project focused on audience analysis, proposal writing, and collaboration. The project was managed using Scrum framework.

Fall 2014 SizeFu Application Interface Design
Created photoshop mockup of proposed application. Produced user flow diagrams, storyboard, use case documentation, and video advertisement.

Professional & Extracurricular Activities:

Fall 2016 Joined Association for Computing Machinery's Council on Women
Took an active role in UMaine's newly established ACM-W chapter. Worked to recruit participants and to plan outreach and team building events.

Summer 2016 Student Mentoring at the VEMI Lab
Mentored High School student at the VEMI Lab. Introduced student to VR design and the Unity Game Engine and assisted in the creation of a VR experience.

Spring 2016 Inducted into The Honor Society of Phi Kappa Phi

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Fall 2016 Artist Consultant - Electromechanical Art Piece
Assisted artist Wade Warman in his creation of a Arduino-powered slot machine. The piece was later included in the 2016 Romeo and Juliet Exhibition, Sally Otto Gallery, Alliance, OH

Additional Skills and Technical Expertise:

Spoken Languages: English (Native)
French (Moderate, four years of experience)
Japanese (Basic, one year of experience)

Coding Languages: HTML & CSS
Significant experience in responsive, adaptive and interactive web design.

Javascript & JQuery
Used in projects to create web games, forms, Node.js and interactive 3D experiences using Three.js

PHP

Proficiency in PHP forms and server uploads.

Java
Experienced in using Java in Eclipse and Android studio. Understanding of Java based data structures and interfaces.

C#
Regularly use C# in programming for Unity Game Engine.

Python
Well versed in Python 2.7 and 3

Swift
Working understanding of Swift.

Software Applications:
Unity 3D, Processing, Adobe Photoshop, Blender 3D, Android Studio, Sublime Text, Adobe Illustrator, Maya 3D, Xcode, Cyberduck, Adobe Premier, Fusion 360, Eclipse, Sourcetree, Adobe After Effects, Autodesk Inventor, Python IDLE, FileZilla, Adobe Edge, Rhino 3D

Prototyping Skills:
Laser Cutting, Universal VersaLaser VLS4.60 Laser Engraving/Cutting System Logilase 3060 80w Laser Engraving/Cutting System

3D Printing, Replicator 2 3D Printer (Printing and Maintenance)
LulzBot TAZ 5 3D Printer
Formlabs Form 1 Stereolithography 3D Printer
Stratasys Objet30 Polyjet 3D Printer
ZCorp ZPrinter 450 Power Based 3D Printer"

Micro-Controller Programming, Significant experience in programming, wiring and prototyping with Arduino. Limited experience using Raspberry Pi, Adafruit Trinket and FLORA

Soldering, Skilled in soldering, regularly used in prototyping, modifying and repairing electronics.

Other Notable Traits:
Strong problem solving skills
Highly adaptive
Ability to lead groups
Ready to approach new challenges
Ability and willingness to learn on the fly

Works well independently or in collaborative settings
Self motivated

References are available on request
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