Celeste C. Mason

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I am a researcher and software developer, currently working at Ubimax GmbH on educational applications of mixed reality and wearable computing, with the goal of pursuing a PhD in computer science. I graduated from the Master of Science in Human Computer Interaction program at the Georgia Institute of Technology, with a CS specialization. During my time there, I worked as a Graduate Research Assistant in the Contextual Computing Group under Thad Starner and Melody Moore Jackson on interdisciplinary projects in the areas of mobile sign language learning systems, sensor-based analysis of canine behavior, user studies for robotic perception experiments, and development of wearable underwater systems for marine mammal behavioral studies.

My primary research goal is the study of cognitive processes through prototyping, development and user studies of sensor-based adaptive systems and technologies. User modeling of interests and motivations and how their development is affected by exposure to environmental affordances, with an ultimate goal of gaining insight into enhancement of critical thinking, creativity, and problem solving skills as well as improvement of cognitive systems are of particular interest.

EDUCATION

Georgia Institute of Technology   Atlanta, GA
Master of Science in Human Computer Interaction, CS Specialization   *May 2015*
Bachelor of Science in Materials Science and Engineering   *May 2010*
Including: Research Option, Biomaterials and Nanomaterials Certificate

PUBLICATIONS

"Deep Segments: Comparisons between Scenes and their Constituent Fragments using Deep Learning"
Sep 2014. Georgia Institute of Technology.
J Doshi, C Mason, A Wagner, Z Kira

"Probabilistic Extraction and Discovery of Fundamental Units in Dolphin Whistles"
May 2014. Included in Proceedings of the Int'l Conference on Acoustics, Speech and Signal Processing, Florence, Italy.
Daniel Kohlsdorf, Thad Starner, Celeste Mason, Denise Herzing

"Fabrication of transparent, conductive phase-segregated ITO/PC composites"
Apr 2010. Included in Proceedings of the 2010 MRS Spring Meeting, April 6th, 2010, San Francisco, CA.
Celeste Mason, Rosario Gerhardt

"Piezoelectric Nanogenerators from ZnO Coated CNTs"
Dec 2009. Undergraduate Thesis. Advisor: Dr. David W. Stollberg

"Marine Mammal Behavioral Research Visual Interfaces"

Visualization and Annotation Utility for Marine Mammology Research
Jun 2013 – Aug2014

✧ Project developed as continuation of summer work supporting CHAT (Cetacean Hearing Augmentation and Telemetry) system. HWD-based User Interface designed to provide localization and visualization of dolphin vocalization information to facilitate marine mammal researchers' efforts to develop understanding of dolphin communication fundamentals.


Top-Left: Audio visualization and localization UI concept.
Top-Right: Underwater screen test of first prototype.
Bottom-Right: Attachment configuration of first prototype.

"Flashcards on the Go for Google Glass"

Multi-platform Mobile Flashcard Review System
Dec 2013

✧ Member of team that developed system to aid students and teachers in creation, sharing, performance tracking, and spaced-repetition review of lesson-based flash cards across platforms.
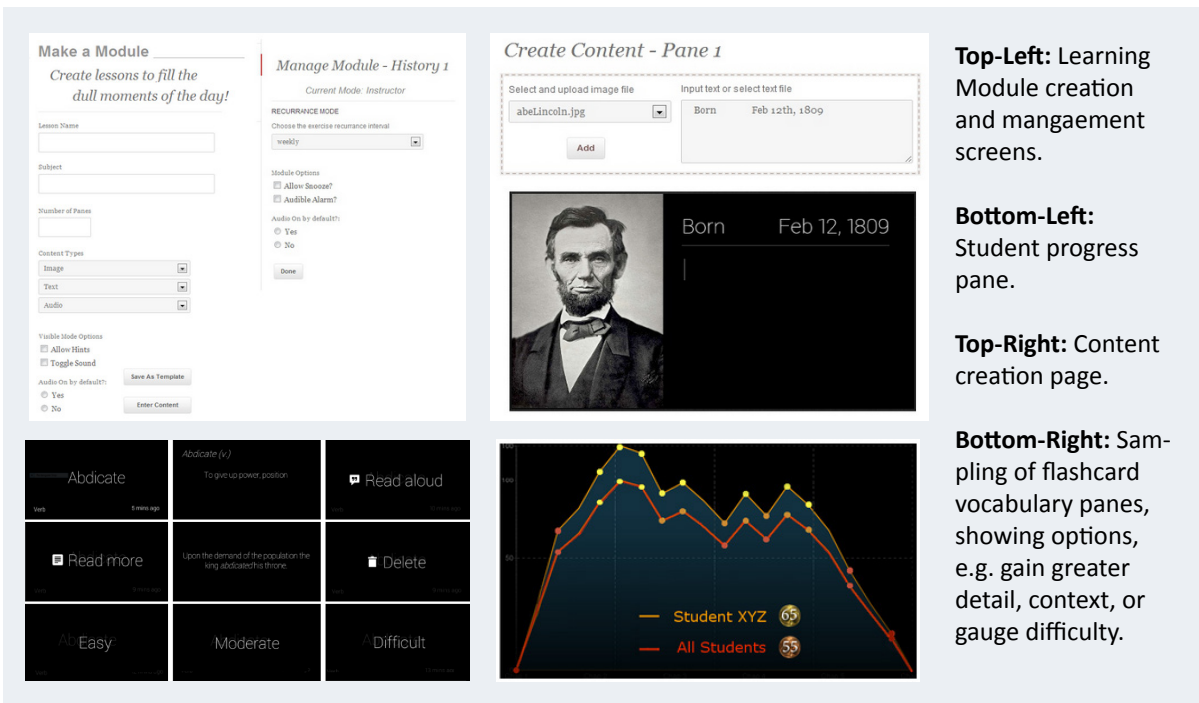
Top-Left: Learning Module creation and mangaement screens.

Bottom-Left: Student progress pane.

Top-Right: Content creation page.

Bottom-Right: Sampling of flashcard vocabulary panes, showing options, e.g. gain greater detail, context, or gauge difficulty.

"POPSign - ASL Learning Mobile Game"

ASL Vocabulary Mobile Learning Game
May 2015

Master's Project – Development of an American Sign Language learning Game designed to leverage the addictive qualities of popular mobile games with the goal of improving time-on-task, resulting in better learning outcomes. User evaluation consisted of pre-play demographic questionnaire, cognitive walkthrough (think aloud protocol) during two gameplay scenarios and associated settings adjustments, and concluded with a short interview and questionnaire.

Left: Mockup of core gameplay elements in final layout.
Middle: Puzzle Mode gameplay provides slower-paced, repeated exposure to signs vs. fast-paced Arcade Mode for recogition practice.
**Right:** Toggle Hint Mode when stuck.
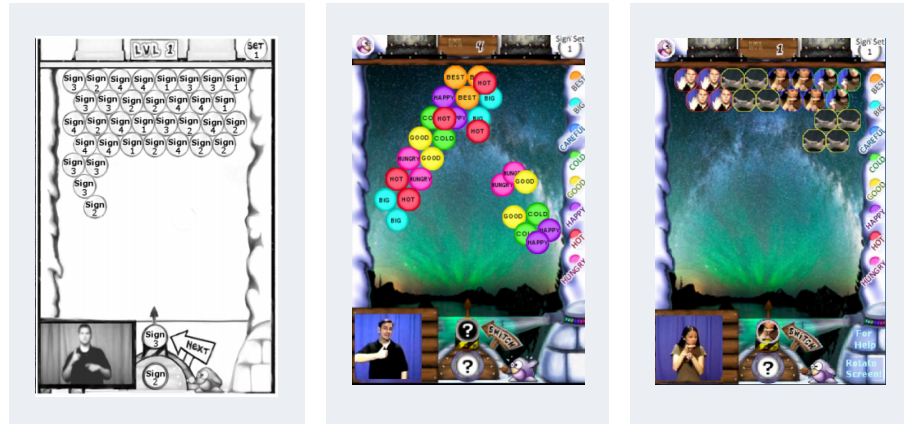
"Polaroid Planetoid"

Game Design and Analysis class project
Dec 2013

Member of team that developed 3D interactive adventure videogame. Players explore an alien world and photograph wildlife for a "National Geographic" style periodical. Responsibilities include writing narrative and dialogue, playtesting, 3D art and asset design.
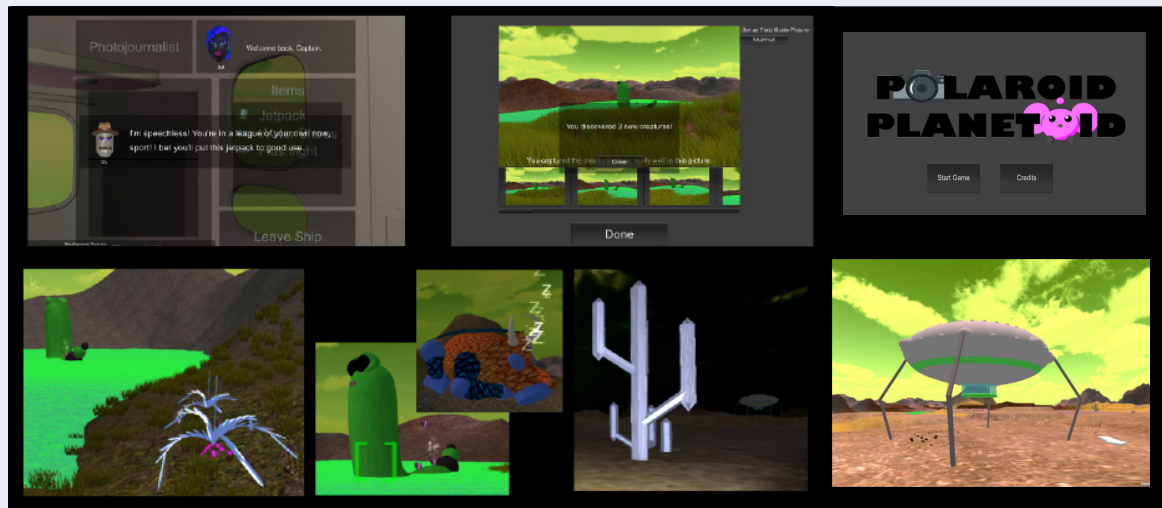
Top Row: Mission and Start screens.
Middle Row (L to R): Scenes while photographing playing and slumbering alien creatures and SAL Base.
Bottom-Right: 'SAL,' the ship's Avatar (mission guide) and bonus item "Jet Pack" awarded for excellent photos.
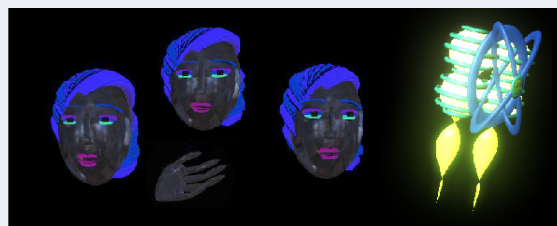
"PeerSpot"

Augmented Reality-based Mobile Phone App

Dec 2012

Member of team that developed, implemented and tested an AR mobile phone navigation app for transportation decision making through comparison of routes, timing, and availability of transit options. User evaluation consisted of anonymous demographic questionnaire, cognitive walkthrough (think aloud protocol) during a series of sample tasks, and concluded with a short questionnaire.

Top: Paper prototype of main workflow
Left: Mockup of map-based search and route break-down screen.
Right: AR view of transit mode toggle.

RELEVANT COURSEWORK

CS:

Mobile & Ubiquitous Computing

Object-Oriented Programming

Intro. to Databases

Software Engineering

Collaborative Computing

Discrete Mathematics, ODE, Calculus I-III

HCI:

Psychological Research Methods for HCI

Sensation and Perception

Developmental Psychology

Educational Technology

Web Usability & Accessibility

Nonverbal Communication

Technology-Assisted Animal Interaction

Design:

Wearable Product Design

Game Design & Analysis

Emergent Game Lab Studio

2D Design

Design with Materials I & II

TECHNICAL SKILLS

UX, Prototyping:

◐ User Research Methods: Interviews, Surveys, Usability Benchmarking, Paper-prototyping

◐ Illustration, soldering, sewing

◐ 3D-printing/modeling, lasercutting

Programming:

◐ HTML/CSS

◐ C#, Python

◐ Java, Linux environments, Matlab/Octave, Arduino, Javascript

● SQL, C

Software:

◐ Microsoft Office Suite, Adobe Creative Suite

◯ GIMP, Audacity

◐ Balsamiq, Axure, Unity

◐ Eclipse, IntelliJ, Microsoft Visual Studio, Git, Blender

LANGUAGES

◯ English   ◐ German   ◐ Spanish   ● Japanese

The Wild Dolphin Project & Georgia Institute of Technology   The Bahamas/Atlanta, GA
Research Scientist   *May '15-Present*

✧ Design, development/prototyping, maintenance, and testing of CHAT underwater wearable computer systems; Field-based user studies of wearable systems and data visualization systems.

Ubimax GmbH   Bremen, Germany
Software Developer   *July '16-Present*

✧ Design, prototyping, front-end development of web-based process modeling systems; Design, prototyping, development of tangible mathematical learning systems and augmented reality systems for physics experimentation.

Imagine That! and Future Tech   Atlanta, GA
Science & Technology Teacher   *October '15-May '16*

✧ Teach children (PK to grade 5) Programming, Engineering and Science. Design, development and prepare hands-on, project based lessons for STEM subjects.

Georgia Institute of Technology, Emory University   Atlanta, GA
Research Assistant   *Jan '15- May '15*

✧ Aid in design and development of sensor-based analysis of canine behavioral studies. Duties include: Literature review, materials acquisition, sensor construction, data collection, processing and analysis.

Georgia Institute of Technology   Atlanta, GA
Graduate Teaching Assistant   *Aug '14- Dec '14*

✧ Assist in preparation and administration of User Interface Design (CS/PSYC 3750) course including maintenance of class wiki and T-Square sites, grading, and deliver a subset of lectures.

Aerospace Transportation and Advanced Systems Lab, GTRI   Atlanta, GA
Research Assistant   *May '14-Aug '14*

✧ Data collection and preparation; Design and development of web-based user studies for robotic perception experiments, literature review of deep learning visualization techniques.

The Wild Dolphin Project & Georgia Institute of Technology   The Bahamas & Atlanta, GA
Research Scientist (Intern)   *May '14-Aug '14*

✧ Aid in design, development/prototyping, maintenance, and testing of CHAT underwater wearable computer systems (hardware and software); Field-based user studies of systems.

WORK EXPERIENCE

Georgia Institute of Technology   Atlanta, GA
Graduate Teaching Assistant   *Jan '14- May '14*

✧ Assist in preparation and administration of the Mobile and Ubiquitous Computing course (Grad/Undergrad, CS and ID sections) including class wiki, T-Square site, grading, and in-class activities.

Atlanta International Business, DBA Kristina Collection   Woodstock, GA
Tech Administrator, Assistant Manager, Publications Editor, Head Artisan   *May '10- Dec '13*

✧ Set up and maintained computer systems and networks; Developed and maintained website and customized inventory software; Edited new product photos, catalogs/supplements, training documents.
✧ Acquisitions, import receipt; Oversaw order fulfillment/shipment; Trained and managed new jeweler/artisans and office assistants; Customer and sales representative interactions.
✧ Developed new designs for Kristina Collection jewelry line; Developed new product manufacturing and packaging; Improved preparation processing by inclusion of new tools and methodologies.

Electro-optics Systems Lab, Georgia Tech Research Institute   Atlanta, GA
Student Research Assistant   *May '08- Dec '09*

✧ Designed and fabricated electrical nanogenerators composed of carbon nanotubes grown on rigid or flexible substrates, then coated in the piezoelectric material ZnO.
✧ Assisted in maintenance and acquisition of lab equipment and supplies.

Microelectronics Research Center, Georgia Institute of Technology   Atlanta, GA
Student Assistant/Intern   *Aug '07-Aug '08*

✧ Supported staff in acquisition, maintenance, calibration, repair and efficiency testing of cleanroom equipment, systems, and supplies. Trained cleanroom users in operation of lab equipment and systems during internship.

ACTIVITIES & AWARDS

✧ Awarded travel Grant to attend 2nd Annual Sensory Augmentation Workshop NUS/CUTE Center Summer 2014

✧ Certificate of Recognition for team project "Peerspot" at Convergence Innovation Competition, 2014

✧ Member of ACM-W, SIGSCE, SIGAI, SIGArch, SIGMicro, CHI*Atlanta, Society of Women Engineers

✧ GT-ACM Student Chapter Vice-chair of Graduate Outreach

✧ Judo practitioner for eleven years; achieved black belt rank of Shodan, regional coaching certification for past 4 years.

✧ SCUBA diving certifications (PADI): Open Water, Advanced Diver and Nitrox Certifications.