Exploring
interactions between
humans
and technology

Experience Portfolio

Leif Berg
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Microsoft Design Research Internship

Microsoft Corporation

Investigated how Windows 8.1 updates would be received by varying groups of end-users through the design and execution of several studies.

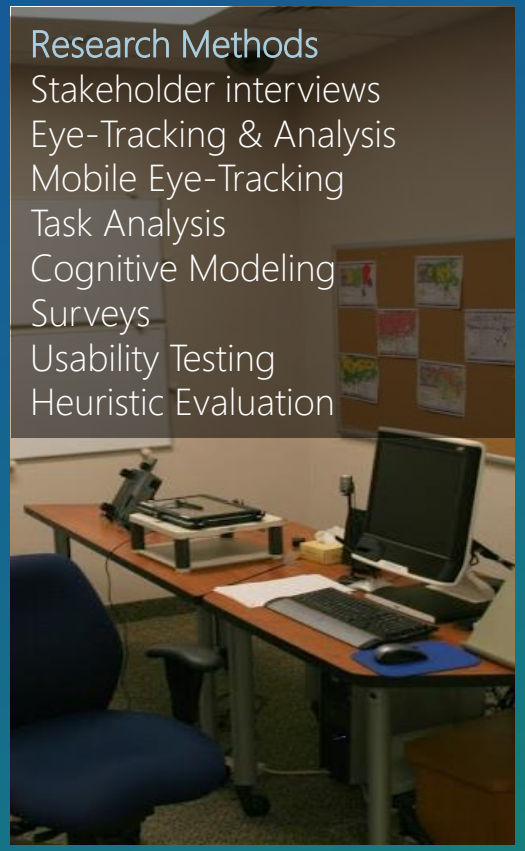
Research Methods
Stakeholder interviews
Task Analysis
Surveys
Usability Testing
Heuristic Evaluation

Impacted design thinking of designers, researchers, and program managers surrounding core user experiences in Windows 8.1.

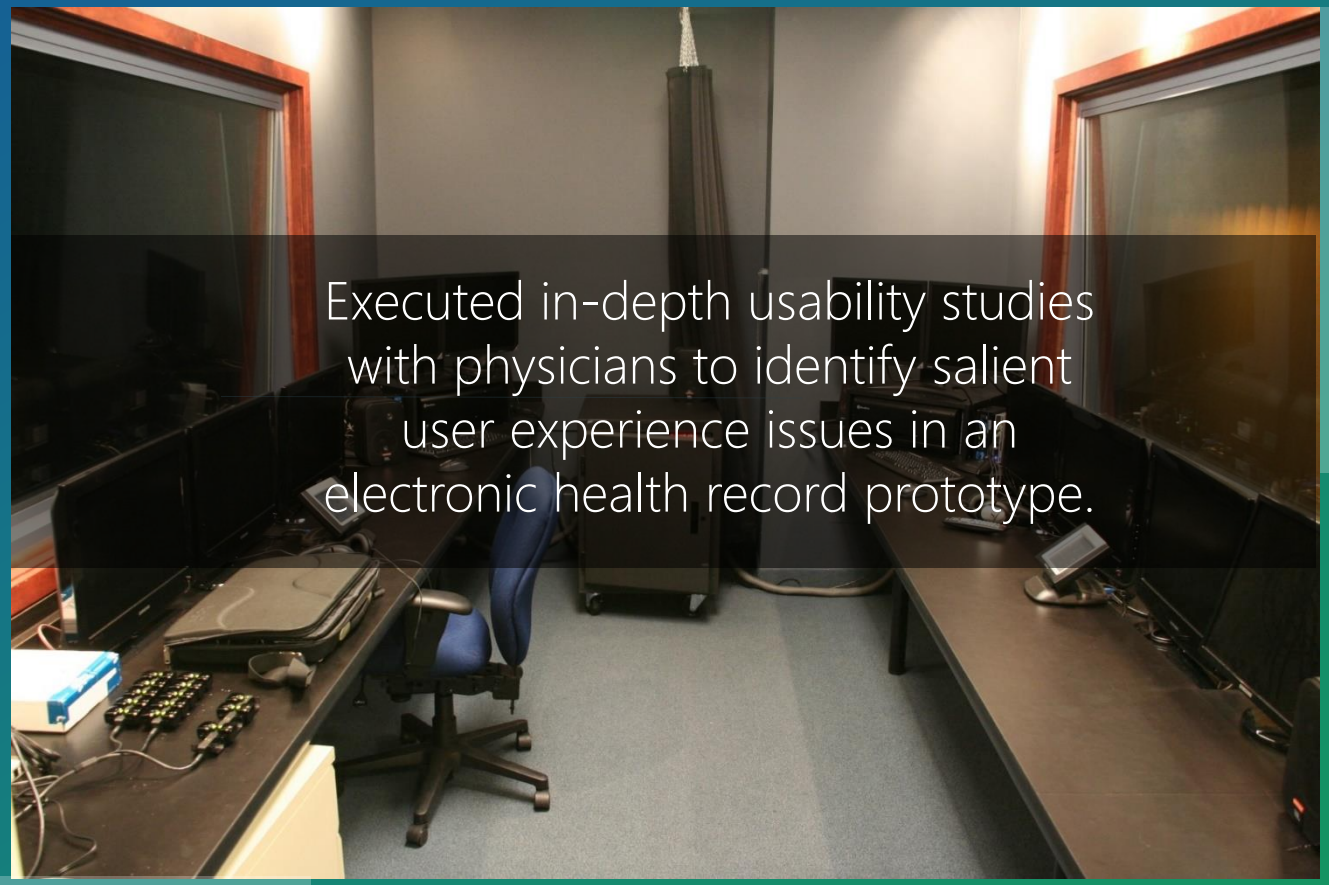
Applied critical thinking and analytics to findings to support product development and future design directions.

HCI Research Internship

Biomedical Informatics Research Center, Marshfield Clinic

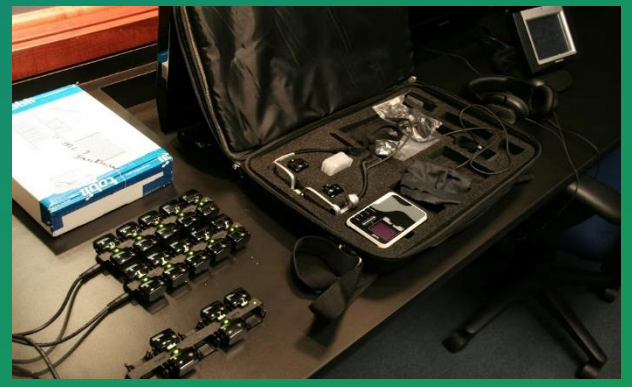


Research Methods
Stakeholder interviews
Eye-Tracking & Analysis
Mobile Eye-Tracking
Task Analysis
Cognitive Modeling
Surveys
Usability Testing
Heuristic Evaluation



Executed in-depth usability studies with physicians to identify salient user experience issues in an electronic health record prototype.

Strengthened designers and product managers understanding of how medical staff perceive and utilize electronic health record systems.



Informed key stakeholders and research staff about design directions through presentations and reports.

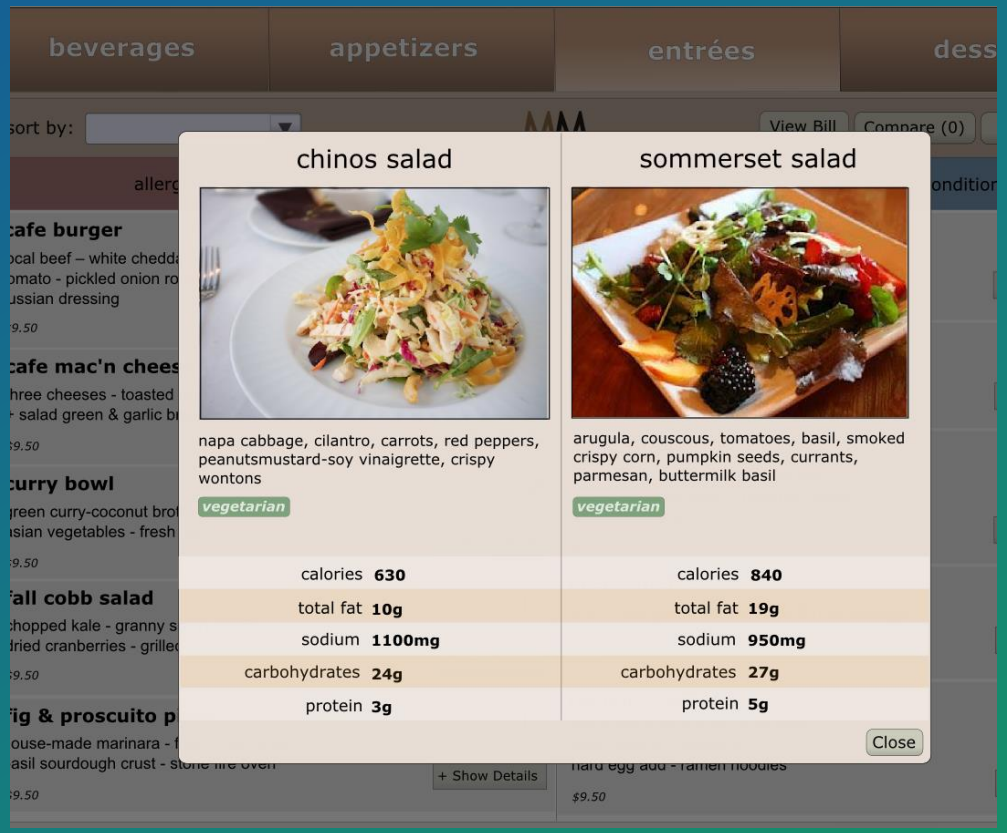
Conceptualized and implemented a user-centered design process integrating cognitive modeling into existing evaluation methods.

MenuMate: Table-top touch interface menu system for restaurants

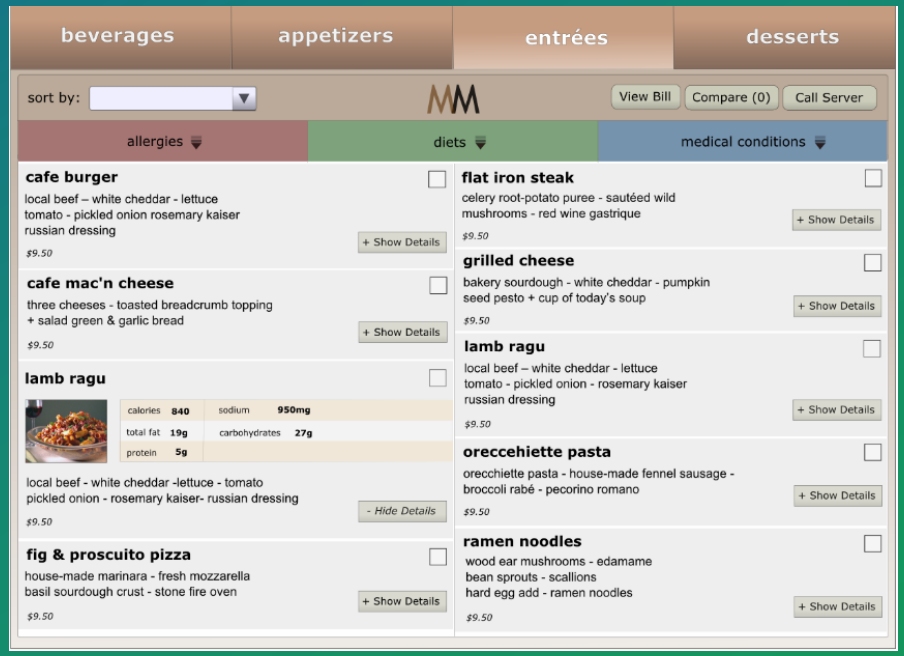
Iowa State University, Ames, IA

Designed, developed, and evaluated a digital restaurant menu system for a touch table interface.

Enhanced prototypes through iterative team design reviews.



Research Methods
Prototyping
Usability Testing
Heuristic Evaluation
Statistical Analysis
Online Surveys



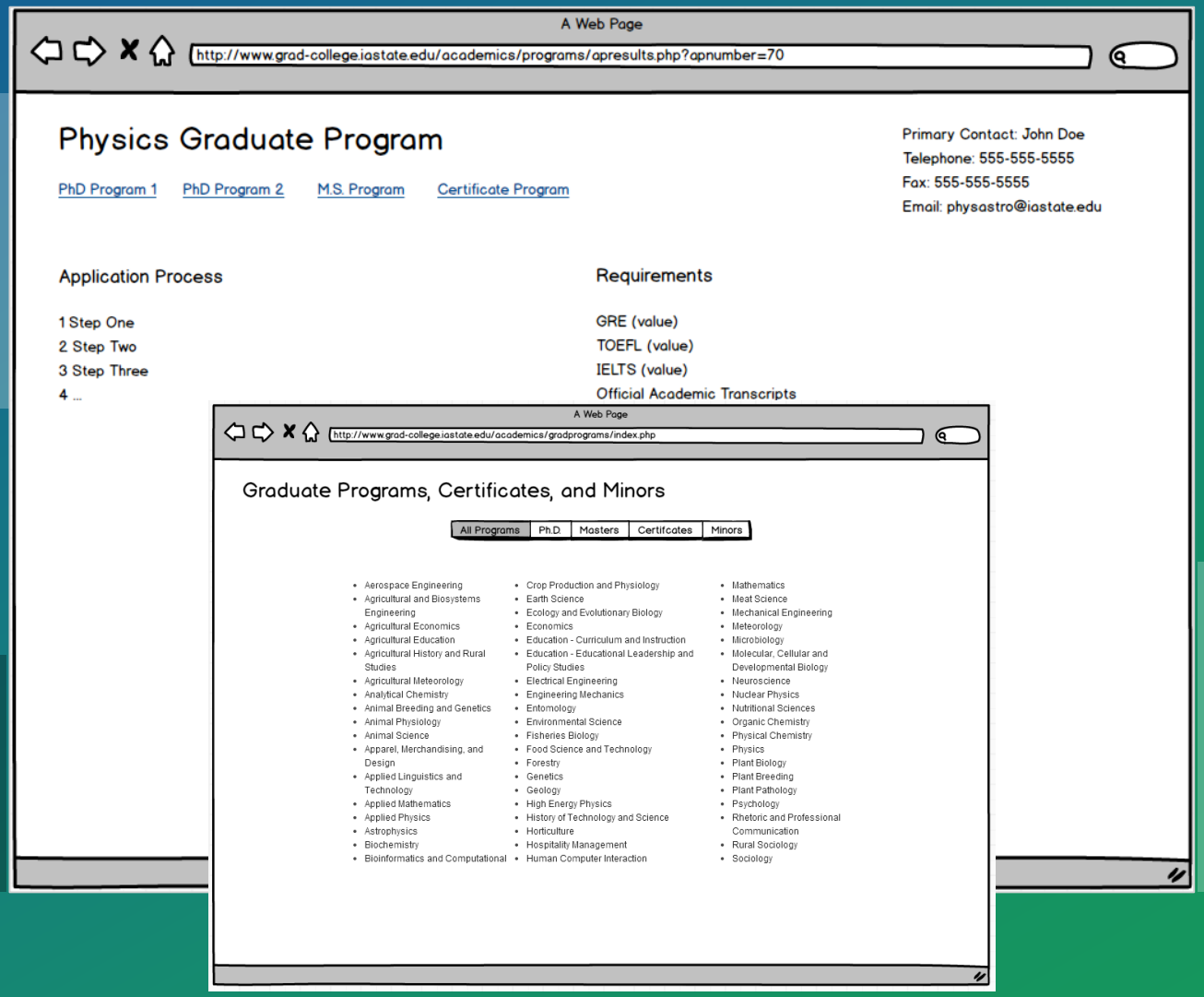
Examined sociotechnical implications of design in context.

Created research poster and presentation to communicate outcomes.

Iowa State Graduate College Website Evaluation

Iowa State University, Ames, IA

Analyzed current state of graduate college website and provided design recommendations to support student goals.



Reduced website complexity enabling students to quickly discover relevant information.

Research Methods
Interviews
Task Analysis
Heuristic Evaluation
Prototyping

Communicated key findings to stakeholders through a presentation and report.

Web Interface for Virtual Reality Interaction

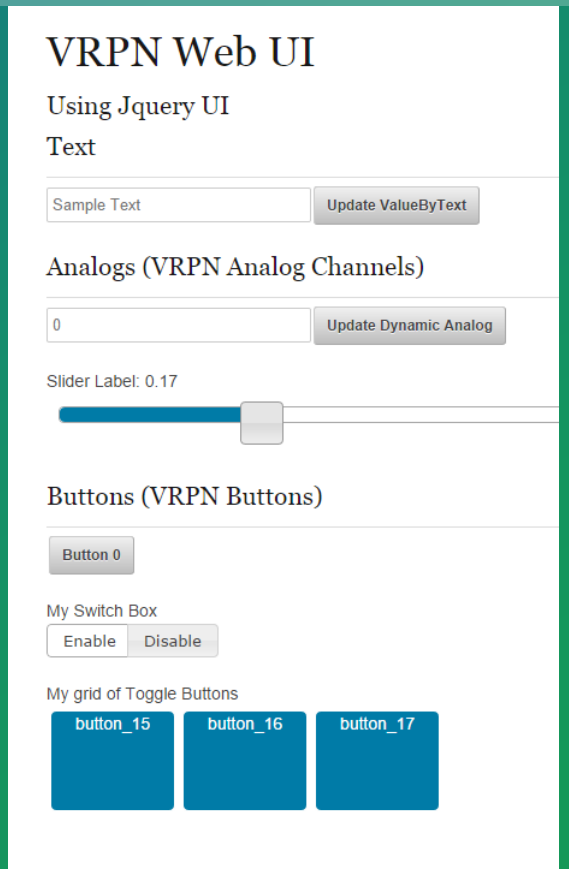
Iowa State University, Ames, IA

Designed and developed a web-based programming interface to support virtual reality interaction on mobile devices.

```
def pressButton(button_name):
    print("Request data", request.form["st
    #converting state to Python boolean vc
    if request.form["state"] == "true":
        data = True
    else:
        data = False
    sendToVRPN(encodeButton(button_name, d
    return "OK"

@app.route("/text/<text_string>", method
def sendText(text_string):
    print("Request data", request.form["da
    data = str(request.form["data"])
    sendToVRPN(encodeText(data))
    return "OK"
```

Coupled existing web tools to enable quick authoring of interaction interfaces (mobile websites).



Research Methods
Heuristic Evaluation
Expert Interviews
Prototyping
Web Development

Integrated expert feedback through iterative prototype evaluations.

Designing Haptic Interaction: *Assisted Virtual Assembly*

Iowa State University, Ames, IA

Investigated a "snap-to" method for assembling virtual products integrating design guidelines from the "drop-and-drag" interaction convention.

Conceptualized virtual assembly interaction technique using a haptic device to encourage assembly process exploration.

https://www.youtube.com/watch?v=cw4rOKokGWE

Research Methods
Heuristic Evaluation
Expert Interviews
Usability Testing
Software Development

ISU HCI UX Lab Development

Iowa State University, Ames, IA

Formulated lab processes and materials to help students utilize the resources of the Iowa State University UX Lab.

Established web-based modules to articulate user experience design principles in context.

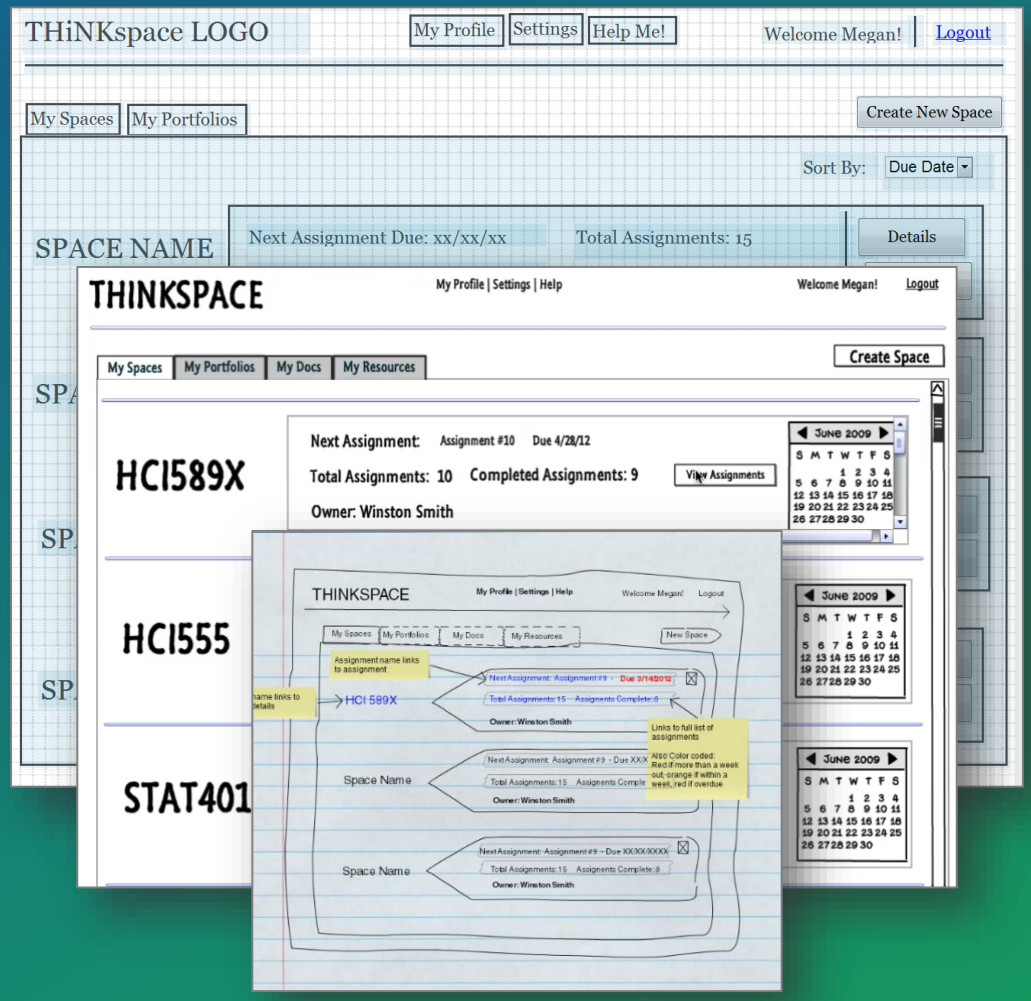
Enabled user centered design learning for students interested in user experience.

UCD Lifecycle: ThinkSpace

Iowa State University, Ames, IA

Influenced ongoing design process of ThinkSpace learning environment.

Designed and developed low and mid-fidelity prototypes to evaluate the potential benefits of design recommendations in context.



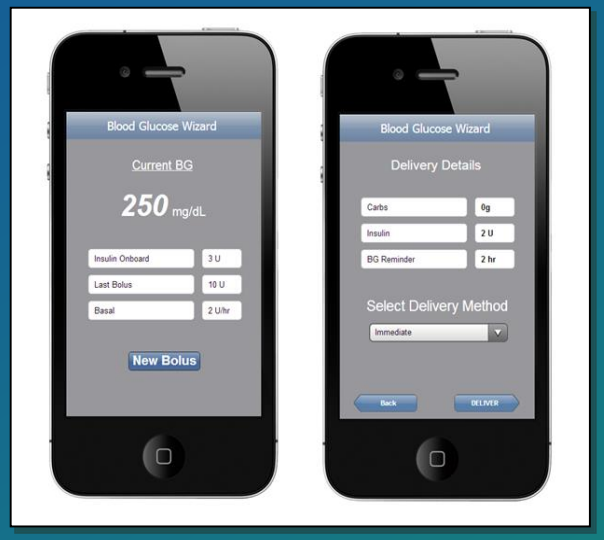
Inspected a single user interaction through the deployment of numerous user-centered design activities with end-users and stakeholders.

Research Methods
Affinity Diagramming
Competitor Analysis
Persona Development
Low-mid fidelity Prototyping
Online Surveys
Usability Testing
Heuristic Evaluation
Descriptive Statistical Analysis

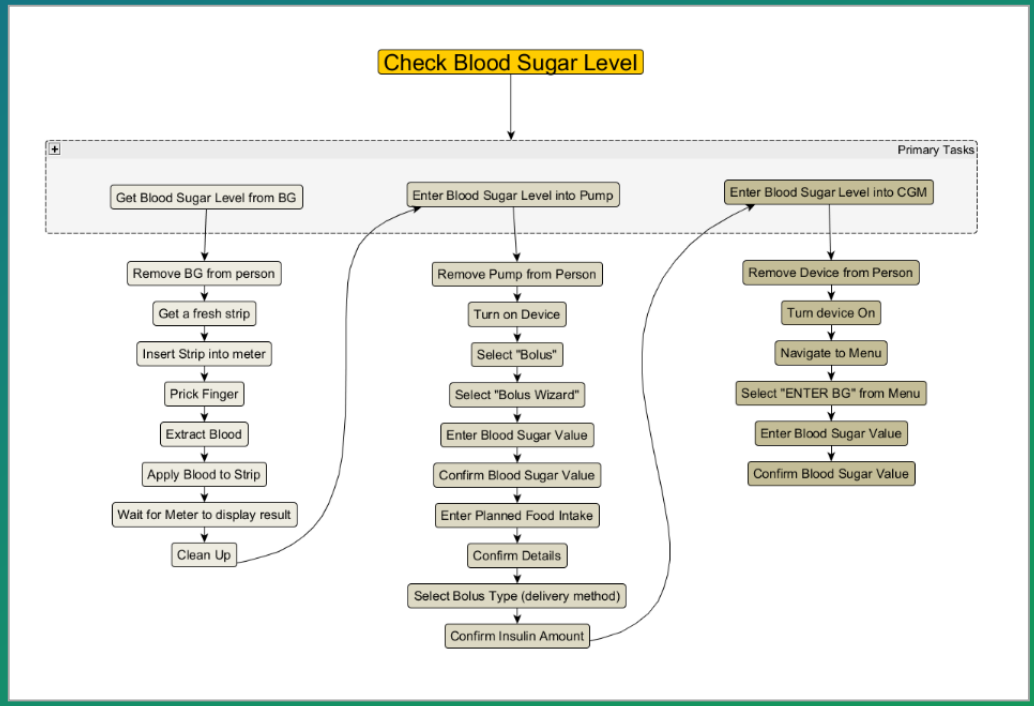
Type 1 Diabetes Mobile Application

Iowa State University, Ames, IA

Designed and evaluated a mobile application to help people with Type 1 Diabetes manage their health.



Investigated existing technologies and processes to identify interaction constraints. Examined core scenarios through interviewing Type 1 Diabetic users.



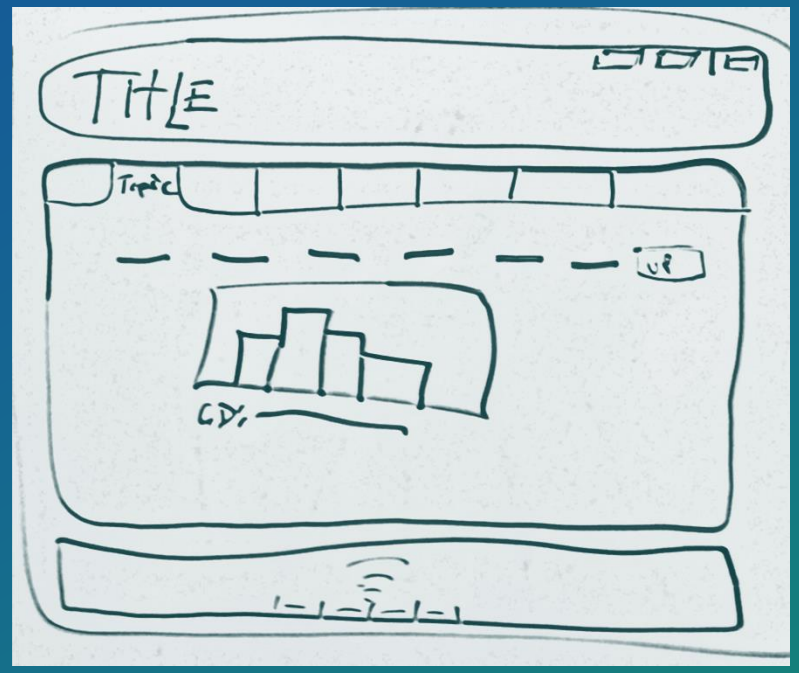
Proposed new processes to minimize device interaction.

Research Methods

Task Analysis, Online Surveys, Low-Mid Fidelity Prototyping, Usability Testing, Heuristic Evaluation

Design and Evaluation of Source Code Analyzer

Iowa State University, Ames, IA



Task Success

Participant	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6
User 1	Success	Success	Success	Success	Success	Failure
User 2	Failure	Success	Success	Success	Success	Success
User 3	Success	Success	Success	Success	Success	Failure

Critiqued prototypes through heuristic evaluation and iterative usability testing.

Research Methods
Task Analysis
Low-Mid Fidelity Prototyping
Usability Testing
Heuristic Evaluation

Interviewed programmers to gain insight into possible future software features.

Designed and programmed a web-based tool to help software developers better integrate into open source communities.

Socio-technical Analysis of Regents Hall, St. Olaf College

St. Olaf College, Northfield, MN. (Undergraduate project)

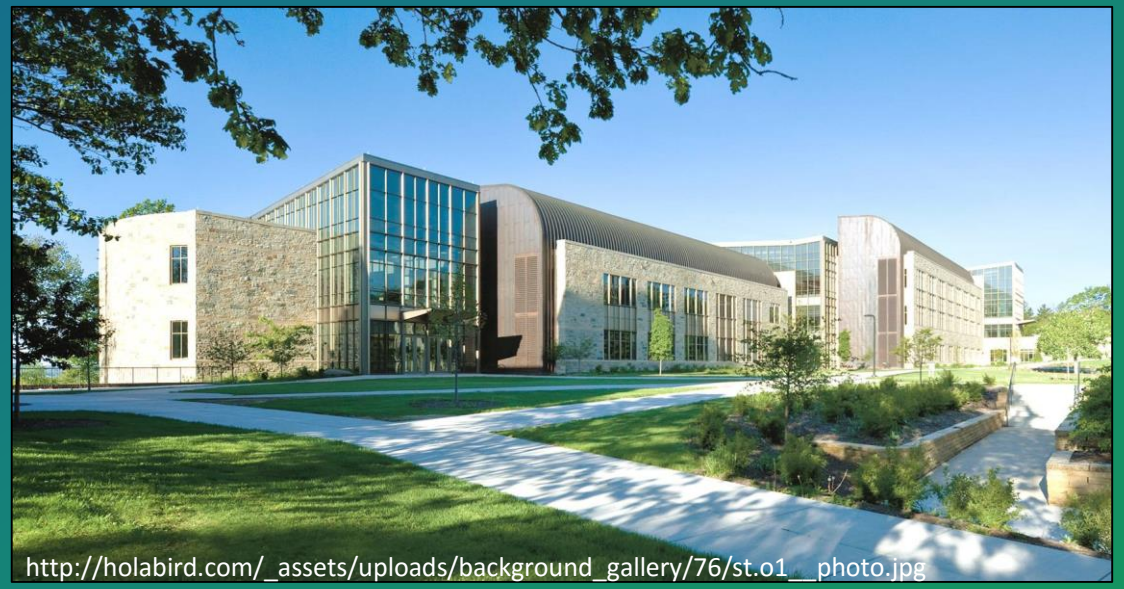
Enriched sociotechnical experiences of students in Regents Hall.

Observed and interviewed potential users to influence future space alterations.

Conceptualized prospective human-computer interactions across numerous interaction spaces.

Surveyed collaborative spaces to identify potential interaction issues.

Research Methods
Surveys
Stakeholder interviews
Field Observations



Presented findings and recommendations to the building's design team. Spring 2008.