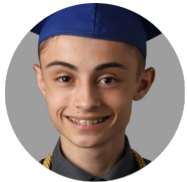


Diverse Makers



**Daniel
Minichetti**
Lead



**Kane
Davidson**
Architect



**Eduardo
De La Rosa**
QA



**Elleana
Negrelli**
Recorder



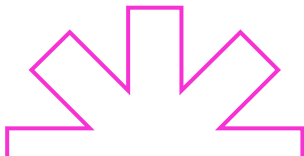
**Aaron
Ramirez**
Communicator



CS Faculty
Michael
Leverington



**Capstone
Mentor**
Vahid
Nikoonejad Fard



About our Client



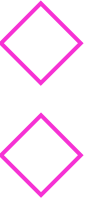
Dr. Jared Duval
Assistant Professor – SICCS NAU
Director of Playful Health Technology Lab

Experience in the Field

- Uses research through design to develop therapy games and playful applications that help improve and maintain health

Research Focus

- Specializes in serious games for health that emphasize human-computer interaction with assistive technology





Increasing STEM Accessibility



“Over 40 million Americans have a disability, however, research shows that disabled people are severely underrepresented in STEM fields. So much so that only 3% of people in the STEM workforce have a disability.”

- STEM learning opportunities are not equally accessible to those with disabilities
- Makerspaces offer hands-on STEM learning outside school

cocoop





Issues in STEM Accessibility



Limited Access to Makerspaces

- Many makerspaces are not physically accessible to individuals with disabilities

Lack of Learning Resources

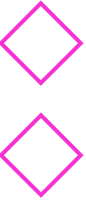
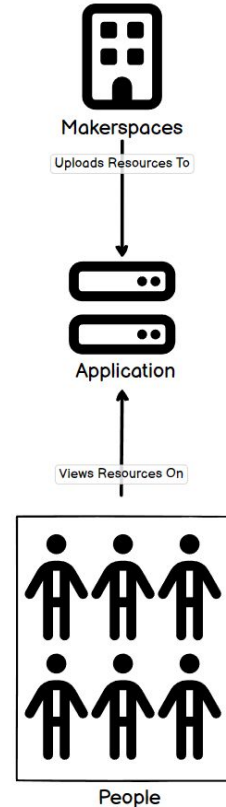
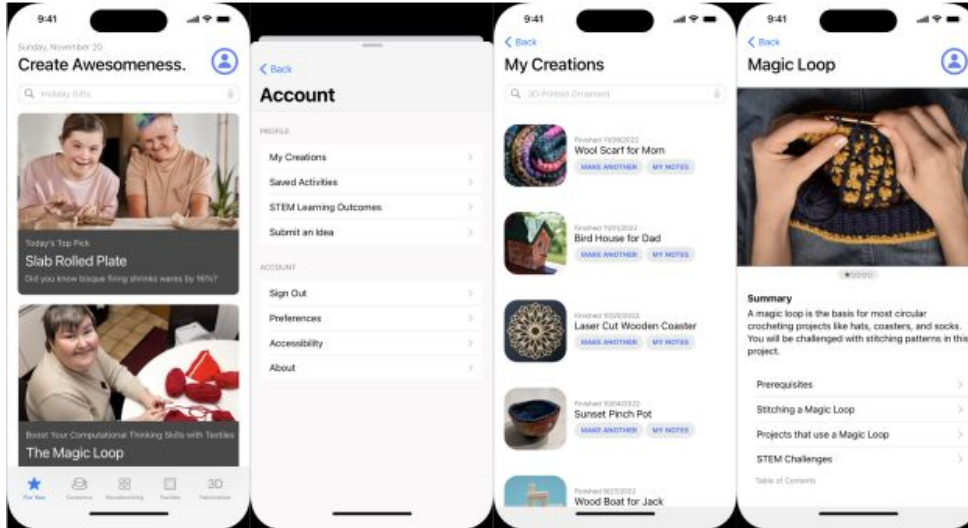
- Current STEM materials and maker project guides do not cater to diverse learning needs

Social Isolation in STEM

- Those with disabilities face social barriers leading to a lack of community

Making STEM More Accessible

- Our mobile application will act as a central hub for sharing STEM resources
 - This will provide tools to those with disabilities



Functional Requirements

Hosting for STEM content and resources

- Google Firebase Database



Accessible user interface for multiple disabilities

- Nielsen's Heuristics Principles
- Material Design Framework



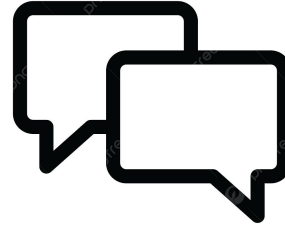
Functional Requirements Cont.

Connection to local makerspaces

- Chat with other users
- User location data

User profile creation and management

- Share details about themselves
- Viewable by makerspaces



Performance Requirements

Usability

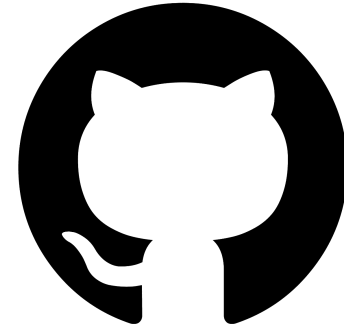
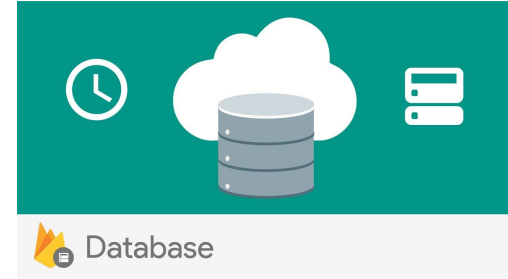
- Intuitive UI for makerspaces
- Usable in a home environment

Optimization

- Quick database operations

Maintainability

- Readable code
- Thorough documentation
- Version control



Potential Risks

Risk 1: Unintuitive system for Makerspaces

- Description: Poor design of application could lead to low usage and contribution
- Likelihood: High
- Mitigation: Communication with client and stakeholders



Risk 2: Disability Negligence

- Description: Unintended negligence of certain disabilities when accommodating for others
- Likelihood: High
- Mitigation: Follow proper design principles such as WCAG

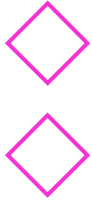


Project Schedule

PROCESS	SPRING SEMESTER					FALL SEMESTER						
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Requirements Engineering Document				■	■							
Design Review 1				■								
Tech Demo with Mentor					■							
Development Phase (coding, design, implement)								■	■	■		
Testing Phase (UAT, Integration testing)										■	■	
Deployment of application											■	■

Now





Summary



Project Importance

Breaking barriers
in STEM



Solution Overview

Mobile application enforces
usability and accessibility



Future Steps

Plan next
development phase

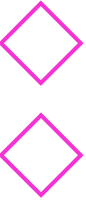


Build upon
outlined framework



Network with
makerspaces





Thank you!
Any Questions?

