MICHIGAN STATE UNIVERSITY

# Project Plan
# Cloud Based Video Face Tracking

## The Capstone Experience


Team TechSmith

Alex Cramer
Kayla Grotsky
Eric Newman
Alyssa Werner
Ryan Zahm

Department of Computer Science and Engineering
Michigan State University


Spring 2016

*From Students…*
*…to Professionals*

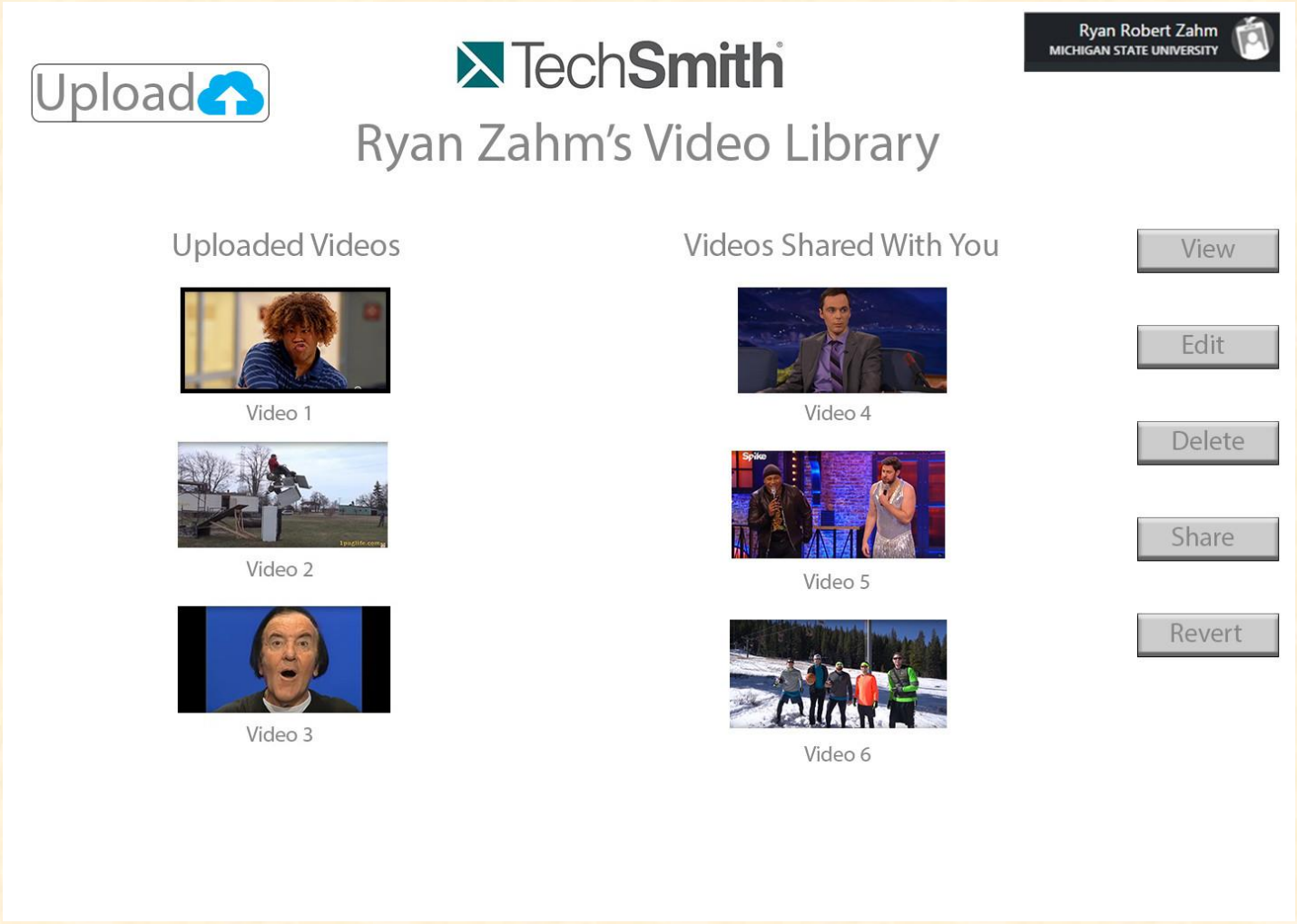
# Functional Specifications

- Automatic face tracking in videos
- Automatic blurring and highlighting of specific faces
- Cloud based storage and management of video library
- Provides the ability to blur or highlight faces throughout a video quickly and with ease
- Provides effective sharing and storing options

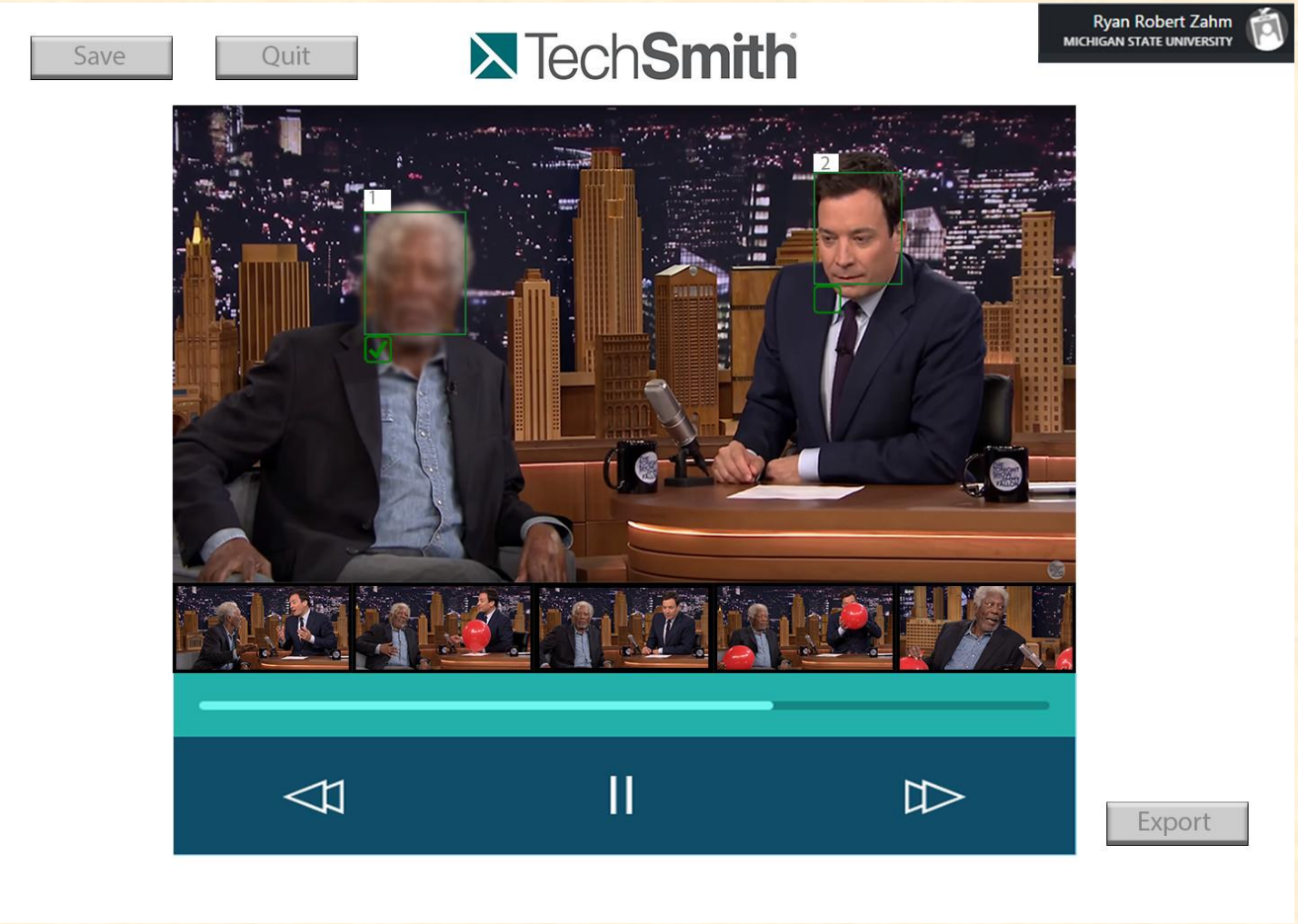
# Design Specifications

- Quick, simple, Active Directory backed login
- Ability to upload or choose a video from libraries then choose management action from menu of buttons on Library page
- Can log out from Library page
- Choose to blur or highlight specific faces as well as move back and forth through frames of chosen video on Edit page
- Ability to save, undo, export or quit from Edit page

# Screen Mockup: Library Page



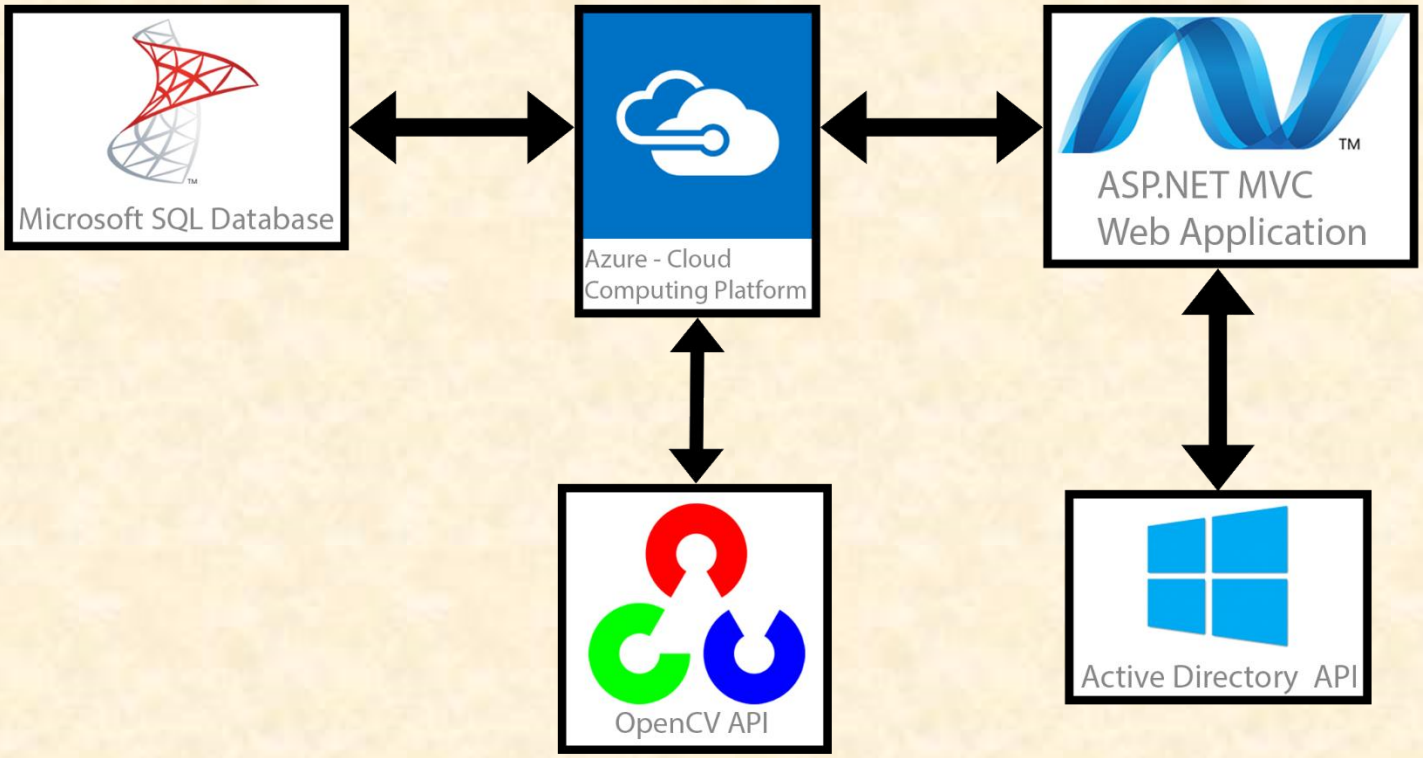
# Screen Mockup: Edit Page



# Technical Specifications

- Azure & Active Directory used for authentication, cloud storage and hosting the application and database
- Microsoft SQL Database for data storage and user login and permissions storage
- OpenCV for video decoding/encoding, editing and face tracking
- Development environment includes Visual Studio, GitHub, and the Azure portal

# System Architecture



# System Components

- Hardware Platforms
  - Capstone Lab iMacs
  - Personal Laptops
  - Any video recorder with modern upload capabilities
- Software Platforms / Technologies
  - ASP.NET / MVC
  - Azure & Active Directory
  - Microsoft SQL Database
  - OpenCV

# Testing

- Manual Testing
  - Camtasia to create test videos
- Visual Studio Unit Testing for dependable processes
- Usability Testing for UX design and feature ranking

# Risks

- Integrating the face tracker API
  - Learn how to integrate the most appropriate API into a C# application (high priority, medium difficulty)
  - Consult TechSmith, go over tutorials, part of first prototype with hard deadline
- Video editing within the application
  - Learn how to change properties within a video and refactor with changes (high priority, high difficulty)
  - Use tutorials, part of first prototype with hard deadline
- Identity-Specific Face Tracking
  - Figure out a way to track a specific face throughout a video for filter (medium priority, high difficulty)
  - Try to use API to accomplish, part of second prototype with hard deadline
- Design of the application
  - Create a user friendly way to navigate the application, learn more front-end development techniques (medium priority, medium difficulty)
  - Make multiple mock ups and communicate with contacts, usability testing, assigned team member