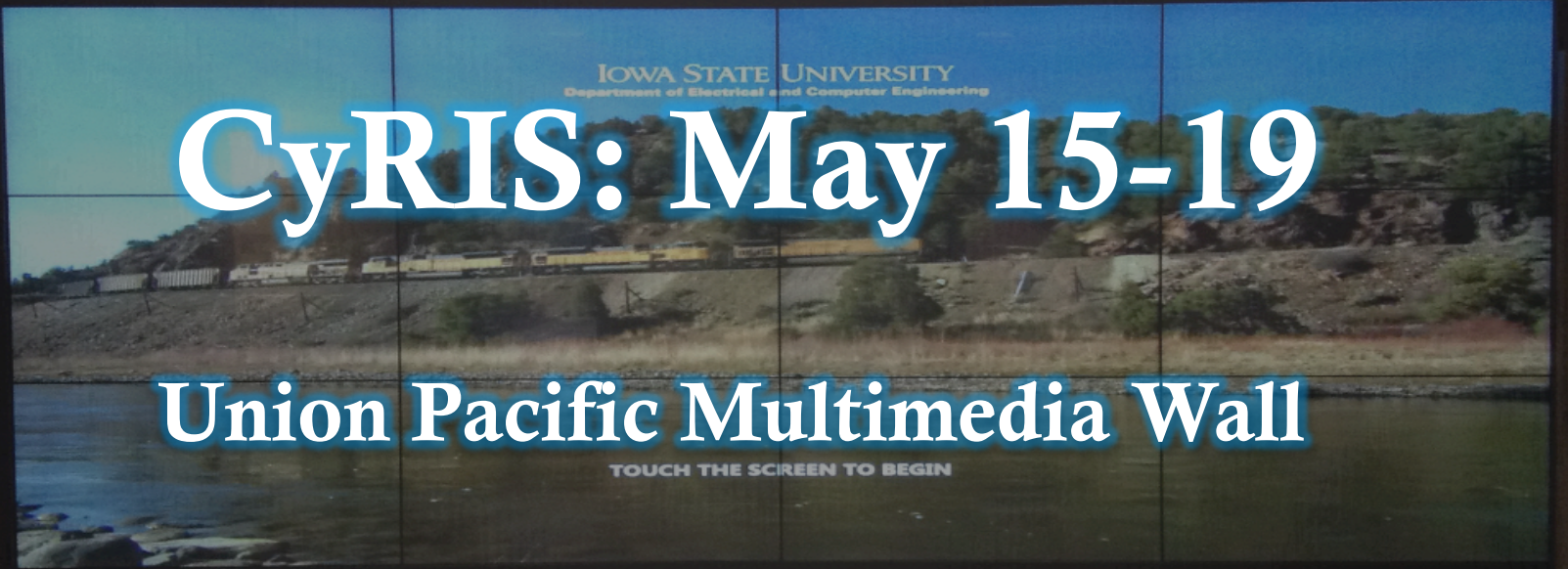


Union Pacific Multimedia Wall



CyRIS: May 15-19

Union Pacific Multimedia Wall

TOUCH THE SCREEN TO BEGIN

Team Information

CyRIS Group



Randy Groh
Team
Leader



Alex Haynes
Code
Tester



Brandon Kuha
Web
Master



Brylee Raupp-Timmons
Key Concept
Holder



Ian Rosenbery
Code
Tester



Maria Vognsen
Key Concept
Holder



Aaron Zatorski
Communications
Director

Advisor: **Manimaran Govindarasu**

Client: **Brock Ascher**

Union Pacific Multimedia Wall



Cyclone Real Time Interactive System

- Designed to capture attention
- Learning tool for students
- Showcase the ECpE Department

Union Pacific Multimedia Wall



12 55" LED HDTVs

72 point multi-touch IR beam grid

Bose 5.1 surround sound

Dedicated windows machine

55" Panasonic touch monitor test bed

Problem Statement

The current interface and content displayed on the Union Pacific Multimedia Wall is uninteresting, unintuitive, sluggish, and fails to demonstrate the interactive potential that the hardware can provide.

Current Wall

The
Department

Research

News and
Events

Academics

Careers

Alumni



IOWA STATE UNIVERSITY
Department of Electrical and Computer Engineering

WELCOME TO ECpE

Our students, faculty and alumni have played a central role in developing the technology we all use today. Electrical, computer and software engineers are solving important problems and making a difference in the lives of people around the world.



The Department
132000101

Academics

Alumni

Current Wall

The Department

Research

News and Events

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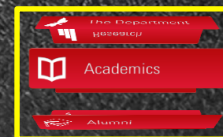
Alumni



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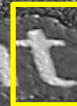
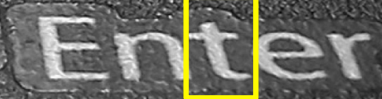
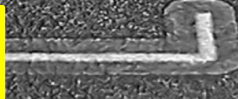
Alumni



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Goals

Create enticing applications

- Leverage full hardware potential
- Easily maintainable

Revamp main layout

- Deploy created applications
- Intuitive navigation
- Displays dynamic information
- Visually scalable content

Constraints & Considerations

Intuiface's limited ability to:

- Embed third-party applications
- Provide dynamic content
- Create customized assets

Accuracy and response time of IR sensors

Lack of source code from Phase I

Scheduling access to main display

Requirements

Functional

- Launchable applications with minimal navigation
- Display relevant information to multiple viewers consistently
- Transitions between main interface and applications

Non-Functional

- Minimize system response time
- Secure & Reliable
- User Friendly
- Inviting to users

Stellarium App & Screensaver

Open Source Star Exploration

Sunset-to-Sunrise Screensaver

Explore countless stars, planets
& constellations

Gain an astronomer's insight

Realistic sky for the naked eye

Moon

Type: moon
Magnitude: -12.12 (extincted to: -11.97)
Absolute Magnitude: 32.37
RA/Dec (J2000.0): 7h08m21.3s/+17°42'22.0"
RA/Dec (J2014.9): 7h09m13.3s/+17°40'53.7"
Hour angle/DE: 22h19m22.8s/+17°40'47.8" (apparent)
Az/Alt: +53°08'03.1"/+59°35'16.8" (apparent) **
Galactic longitude/latitude: -161°10'07.0"/+11°36'26.9"
Distance: 0.002612AU (390,897.718 km)
Apparent diameter: +0°30'33.9"
Sidereal period: 27.32 days (0.075 a)
Sidereal day: 655h43m11.5s
Mean solar day: 708h44m2.8s
Phase Angle: +29°57'34"
Elongation: +149°57'52"
Phase: 0.93
Illuminated: 93.3%



Club & Research Spotlight

Focus on ISU

Showcase submitted content

- Research Projects
- Engineering Clubs

Custom Story Viewer

- Flexible to support many different types of content and media

Lunabotics club wins
NASA mining competition

ISU Grad student proves
Pluto is a planet after all

Team PrISUm races to the
finish

Robotics Club visits high
schools to inspire the next
generation

Professor makes
breakthrough in laser
tomography sampling

ISU Cyber Defense
Competition attracts
industry attention



ISU's Robotics
Club made great
strides today as ...
Bacon ipsum dolor
amet labore ham
hock meatball,
pancetta prosciutto
dolore

bacon t-bone andouille cupidatat consequat.
Chuck anim short ribs aute ut sirloin. Beef ribs
eiusmod pastrami, consequat salami deserunt
tempor leberkas. Doner cupim strip steak
kielbasa in short loin bresaola commodo pork
chop minim duis jowl alcatra fatback cow. .

Daily Brain Byte

Exercise your mind

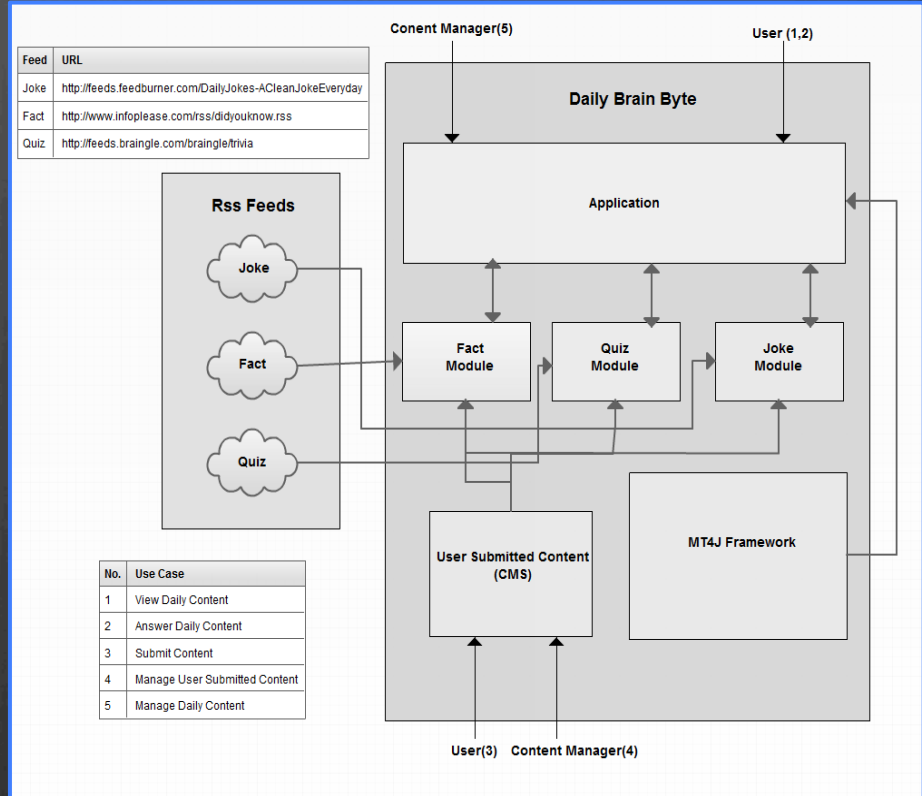
Display new content daily

- Jokes
- Facts
- Quizzes

Students can submit content

FACT

Outer space is only
an hours' drive away...
...If your car could drive
straight upwards.



Ticker

Find me a workstation

Displays real time lab info

- Widget
- Open labs
- Available workstations
- Station operating system
- Sort or filter lab info

	Windows	Linux	Mac OSX
Coover 1031	7	2	0
Coover 2048	13	0	0
Coover 1103	0	0	7
Coover 2041	6	4	0
Coover 3041	0	12	0
Coover 1301	12	0	0

InCadence (Music Machine)

Embrace your fugue

Play instruments

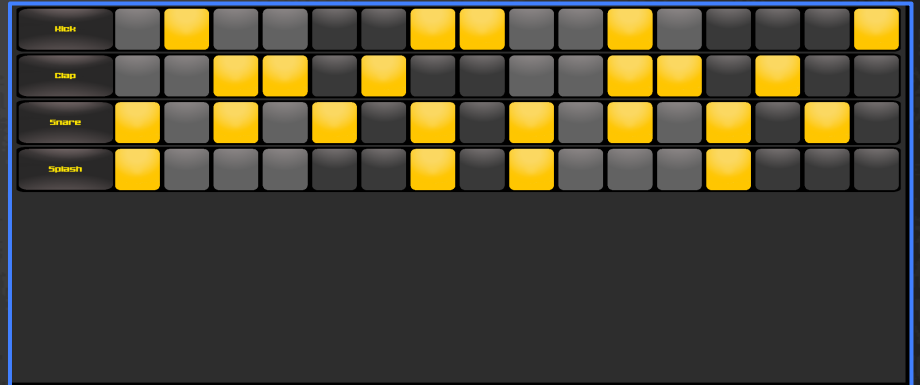
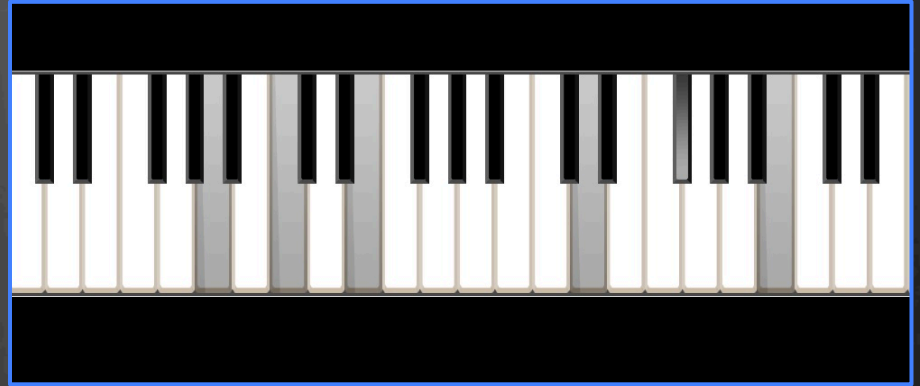
- Piano
- Drum pad
- Drum sequencer

Over 100 MIDI sounds

Record unique compositions

Playback submitted compositions

Vote on any uploaded composition



Directory Search

Look me up sometime

Search ISU directory

- Faculty info
- Student info

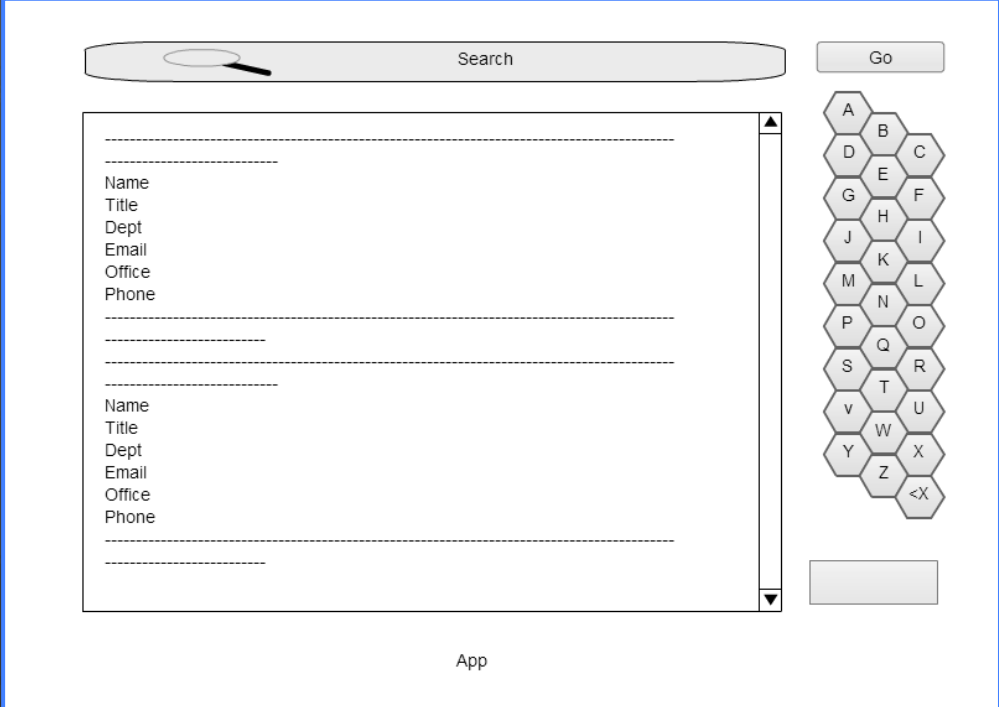
Display any info viewable on
ISU web directory search



Widget

Search Gc

Govindarasu, Manimaran
Title: Professor
Dept: Electrical and Computer
Engineering
Email: gmani@iastate.edu
Office: 3227 Coover
Phone: 515-294-9175



App

Search Go

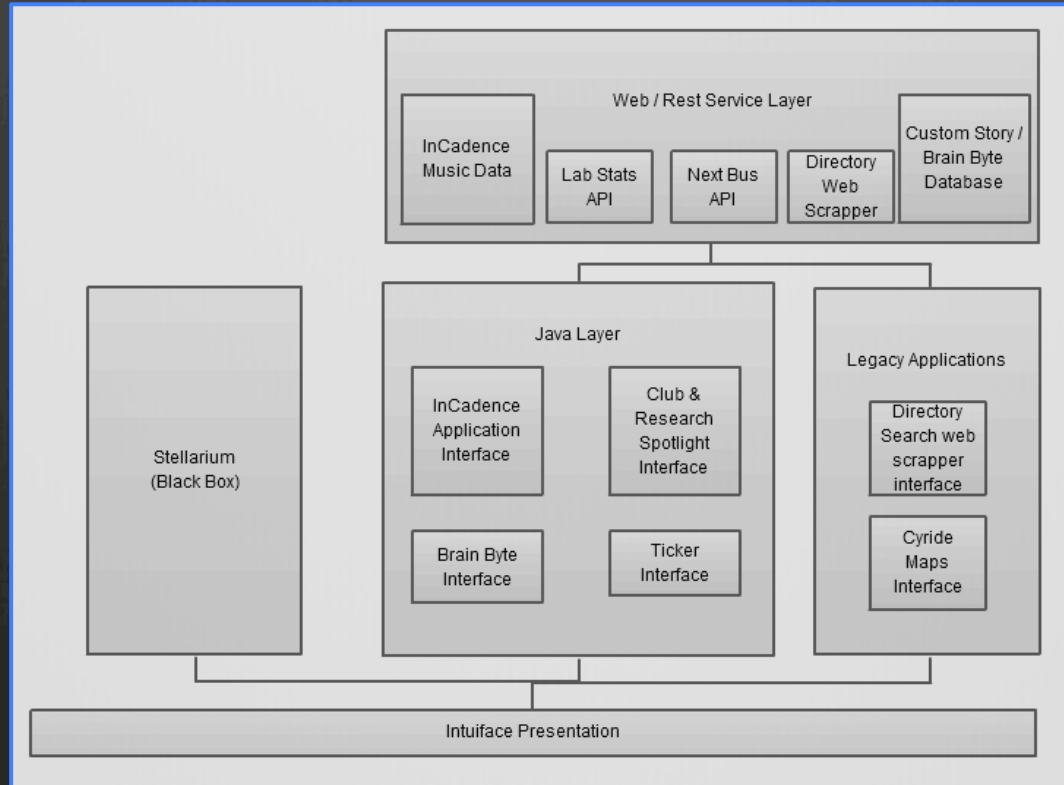
A B C
D E F
G H I
J K L
M N O
P Q R
S T U
v W X
Y Z <X

Name
Title
Dept
Email
Office
Phone

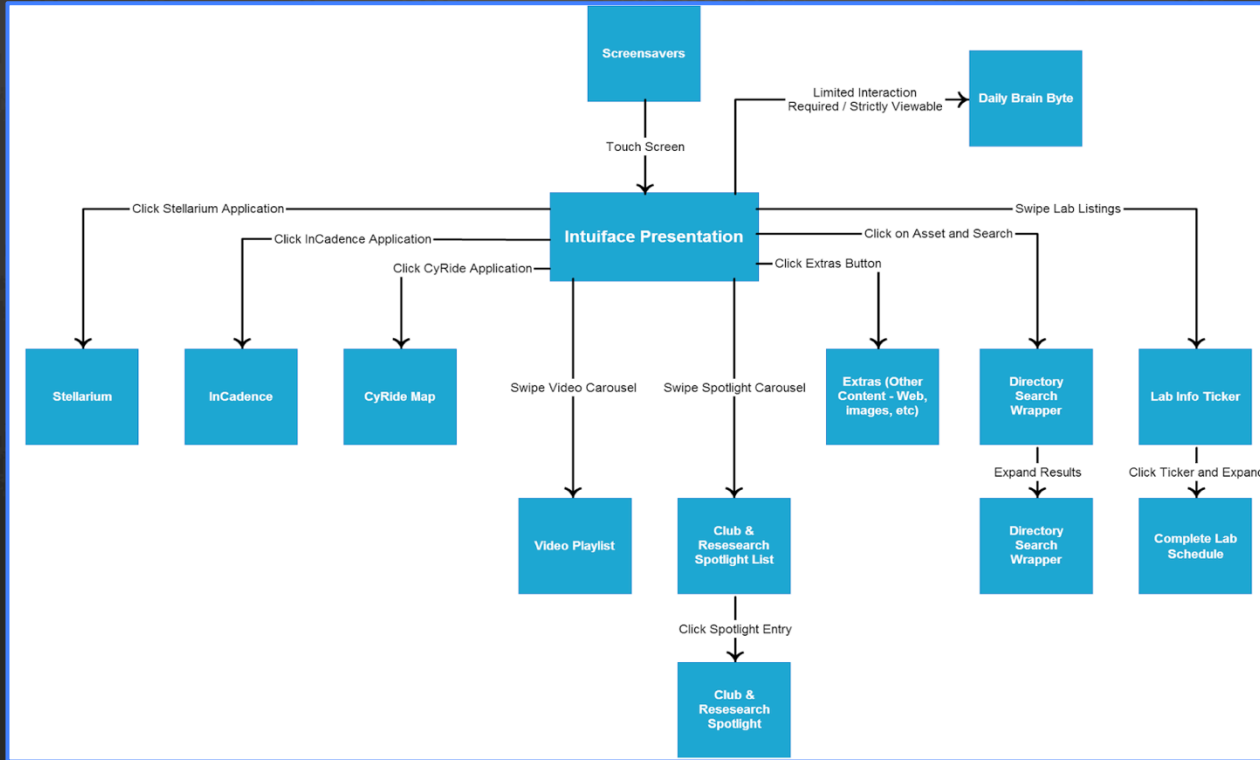
Name
Title
Dept
Email
Office
Phone

System Design

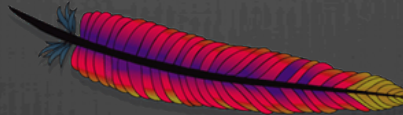
Modular Decomposition



UI Flow



Platform Usage



APACHE
HTTP SERVER



REST



Java &
Java JDBC



INTUIFACE



MySQL™



Java API for Music Programming

Test plan

Acceptance testing

User-level tests (FAN club event)

- Usability
- Performance
- Accessibility
- Enticement

Performance tests

- Applications launch within 5 seconds
- Widgets update minimum every 5 minutes
- Applications close and return to main screen within 2 seconds

Security testing

Current Project Status

Demos exist for Stellarium and InCadence

Club & Research Spotlight has test data but no database connections yet

Directory Search has been heavily researched but has no implementation yet

Daily Brain Byte sources have been chosen

Ticker will leverage the SaltMinion API; API has been tested heavily

CyRide Bus Schedule recovered from Phase I

Resource & Cost Estimate

Resource	Estimated Price
Intuilab Enterprise Edition License - Composer	\$996/year
Intuilab Enterprise Edition License - Windows Player	\$310/year

Group Responsibilities

Randy Groh

- CMS | Club & Research Spotlight
- Daily Brain Byte

Alex Haynes

- Directory Search
- Ticker

Brandon Kuha

- CMS | Club & Research Spotlight
- Daily Brain Byte

Ian Rosenbery

- InCadence (Music Machine)
- Stellarium Application

Brylee Raupp-Timmons

- InCadence (Music Machine)

Maria Vognsen

- Ticker

Aaron Zatorski

- Stellarium Screensaver
- Stellarium Application

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Questions?

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