

DIGITAL PASTS, DIGITAL FUTURES

speaker series



Welcome from Dr. Richard Utz

Chair and Professor

School of Literature, Media, and Communication



Welcome from Bruce Henson
Associate Dean of Libraries
Research & Learning Services



Welcome to retroTECH

Georgia Tech Library retroTECH Team:

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Wendy Hagenmaier

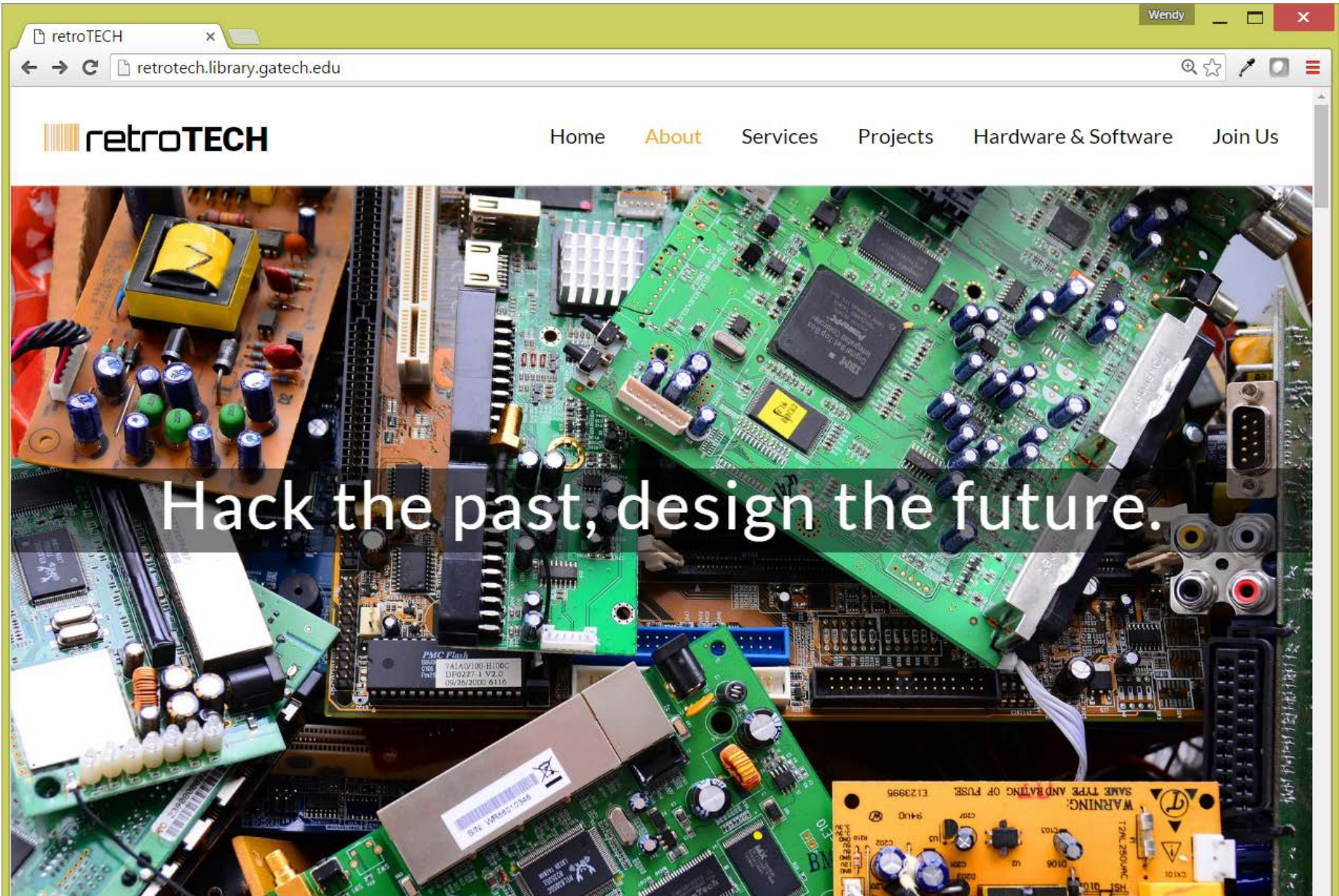
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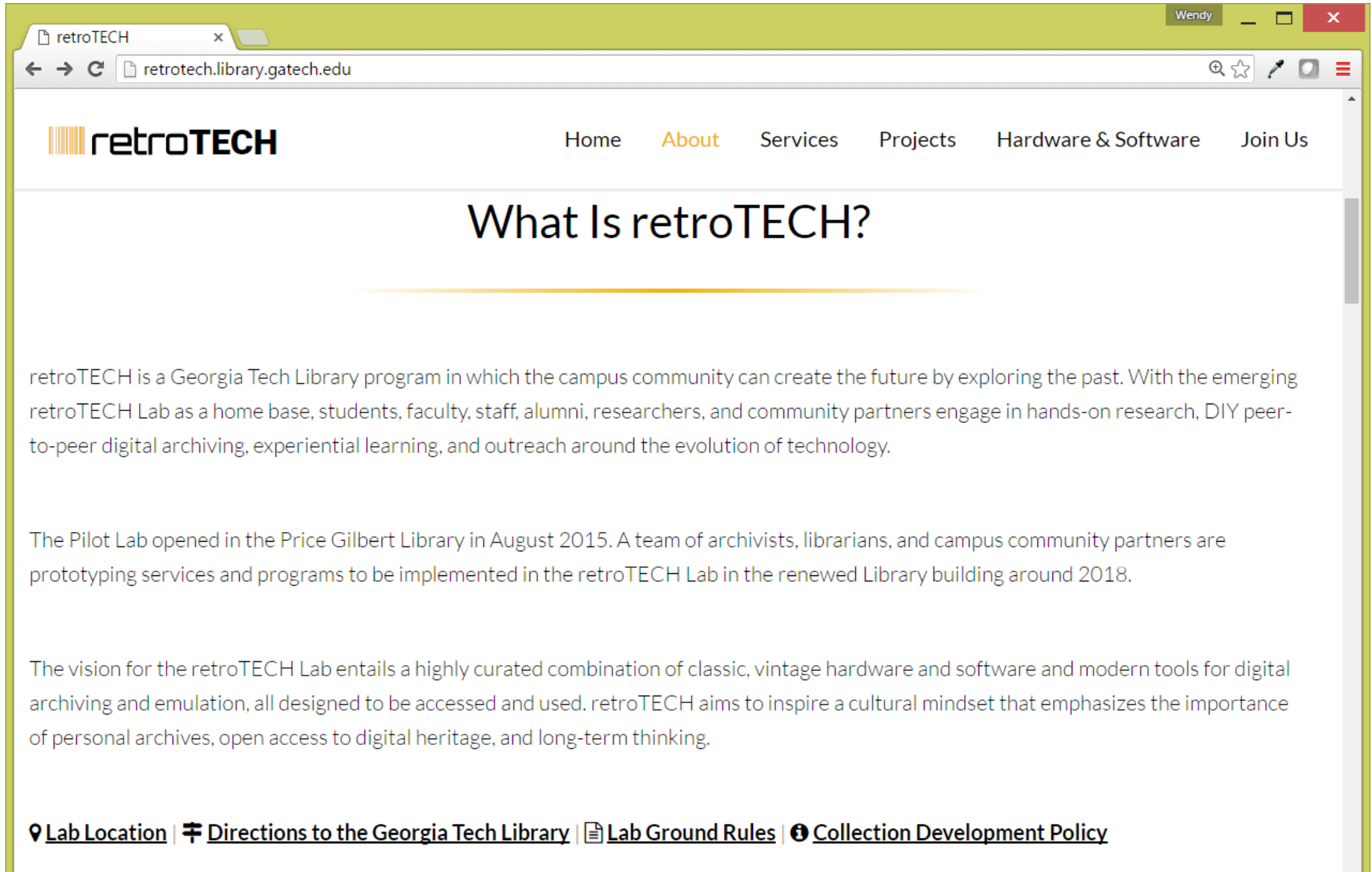


Hack the past, design the future.

retroTECH

Home About Services Projects Hardware & Software Join Us

retrotech.library.gatech.edu



The image shows a browser window with the URL `retrotech.library.gatech.edu`. The page features a navigation menu with links for Home, About, Services, Projects, Hardware & Software, and Join Us. The main heading is "What Is retroTECH?". Below this, there are three paragraphs of text describing the program's mission, its establishment in 2015, and its vision for digital archiving and emulation. At the bottom, there are four links: Lab Location, Directions to the Georgia Tech Library, Lab Ground Rules, and Collection Development Policy.

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What Is retroTECH?

retroTECH is a Georgia Tech Library program in which the campus community can create the future by exploring the past. With the emerging retroTECH Lab as a home base, students, faculty, staff, alumni, researchers, and community partners engage in hands-on research, DIY peer-to-peer digital archiving, experiential learning, and outreach around the evolution of technology.

The Pilot Lab opened in the Price Gilbert Library in August 2015. A team of archivists, librarians, and campus community partners are prototyping services and programs to be implemented in the retroTECH Lab in the renewed Library building around 2018.

The vision for the retroTECH Lab entails a highly curated combination of classic, vintage hardware and software and modern tools for digital archiving and emulation, all designed to be accessed and used. retroTECH aims to inspire a cultural mindset that emphasizes the importance of personal archives, open access to digital heritage, and long-term thinking.

[📍 Lab Location](#) | [🗺️ Directions to the Georgia Tech Library](#) | [📄 Lab Ground Rules](#) | [📢 Collection Development Policy](#)

Emulation:

Arcade Cabinet:

Marion L. Brittain Postdoctoral Fellows, Dr. Josh Hussey and Dr. J. Stephen Addcox built a custom arcade cabinet for retroTECH, to support academic research and course-integrated projects related to the history and user experience of arcade games.



* Coming in Fall 2016! The EMULATION TIME MACHINE!

This modern workstation on wheels will include software required to emulate various vintage or contemporary software and computing environments.

DIY Peer-to-Peer Digital Archiving:

* Coming in the Fall 2016! The ARCHIVE-O-MATIC!

This modern workstation on wheels will include hardware and software to support recovery, access, and preservation of personal or academic born-digital materials, and will enable users of the Lab to conduct digital archiving activities for research or for donation to the Georgia Tech Archives.

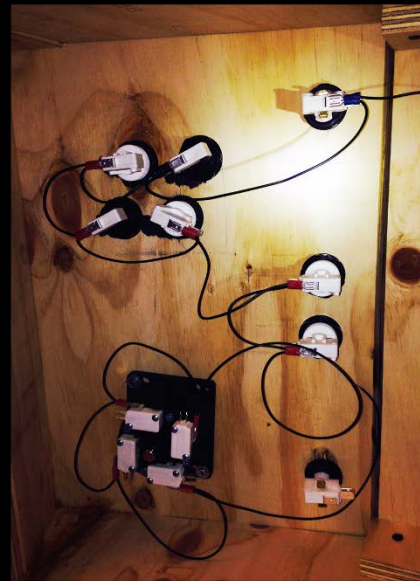
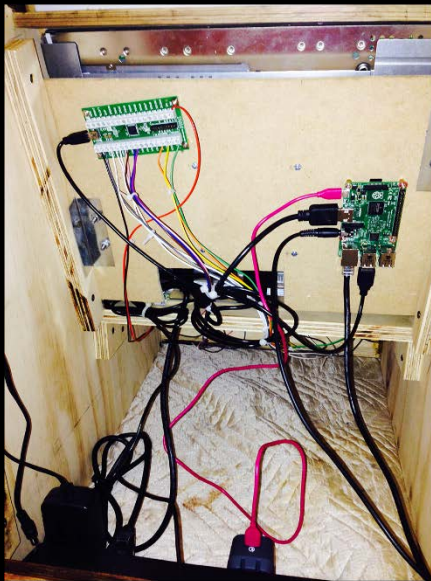
M.A.M.E. Cabinet

Multiple Arcade Machine Emulator



Purposes:

- Support the retroTECH lab with content (preservation material)
- Designed for projects in LMC and ENGL courses



Front end software: PiPlay (Shea Silverman and Mark Holgate)

Assignments & Experiments with Retro Games

- Summer 2015, construction of MAME cabinet for GT Archives with LMC grant
 - Purposes: meaningful archival content, conversations about preservation, game history, user interface/experience, aesthetic design
- Team-taught composition courses themed around games
 - Narrative in Videogames (Spring 2014): <http://joshuahussey.lmc.gatech.edu/gamingthesystem/>
 - Folklore in Videogames (Fall 2015): <http://joshuahussey.lmc.gatech.edu/folkgames/>
- Projects on game histories and design:
 - Critical essays (Spring); Poster projects (Fall)
- Fall 2015 experiment surveyed users on performance of tasks, presence/absence of partner/machine (togetherness), and emotional responses to tasks

TEENAGE MUTANT NINJA TURTLES
KONAMI ARCADE 1988 BEATRICE DOMINGO & MARCUS JONES

PURPOSE The goal is to create the ultimate four player experience that is challenging yet rewarding when all four turtles maximize their potential and work together to truly act like "brothers in arms."

GAME HISTORY

Dec 1988 TMNT	May 1989 TMNT	Dec 1990 TMNT 2: The Arcade Game	Dec 1991 TMNT 3: The Manhattan Project	Dec 1991 Turtles in Time	Summer 1992 TMNT 4: Turtles in Time
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IN MEDIA

- 1984 Began as a comic by Kevin Eastman and Peter Laird
- 1987 First animated series
- Aug 1990 Concert tour at Radio City Music Hall
- 1990-1993 TMNT live action film trilogy
- 1996 Mutant Turtles: Chōjin Denjūbu-ten
- 1997 The Next Mutation
- 2003 Second animated series
- 2007 TMNT movie
- 2012 Third animated series
- 2014 TMNT movie reboot

MECHANICS & VISUAL DESIGN

- Traditional side-scroller, "beat-em-up" game
- Joystick & four buttons
- Up to four players
- 2D design with 3D axial motion
- Whole screen used as gameplay space

EXPERIENCE

- Well-received critically
- Fluid tactile response
- Rapid pace challenge

ARGUMENT Although the cabinet in the RetroTech Lab only allowed for one player, the side-scrolling mechanics and "beat-em-up" style of game contributed to a multiplayer-esque feel which has become the staple of the series in all media adaptations.

CHARACTERS & ELEMENTS

Donatello The Nerd Bo-Staff	Michaelangelo The Goofball Twin Nunchucks
Raphael The Hothead Twin Sais	April O'Neil Damsel in distress Kidnapped by Shredder
Pizza Franchise sponsored by Pizza Hut	Rocksteady First boss to overcome Other bosses: Bebop, Baxter, Stockman, Granitor, General Traag, Krang, Shredder

Leonardo
The Leader
Twin Katanas

Teenage Mutant Ninja Turtles. Students Beatrice Domingo and Marcus Jones.

Human Experiments with retroTECH equipment

- Surveyed users on performance of tasks, presence/absence of partner/machine (togetherness), and emotional responses to tasks

- adapted from Durlach & Slater (2000), *Presence in Shared Virtual Environments and Virtual Togetherness*; Basdogan, Ho, Srinivasan, & Slater (2000), *An Experimental Study on the Role of Touch in Shared Virtual Environments*

Form A

Directions
Good morning, test subject. Please follow directions.

Data Control 1
Gender (write in) Female

Indicate group quantity: 1 2 3 4

This apparatus is: friend enemy
My partner is: wholesome chaotic
I am: tender fractious
This console is: wooden malignant
The cake is a: truth lie

Data Control 2
I have been more:
 relationship-oriented than goal-oriented
 goal-oriented than relationship-oriented

I've typically been interested in:
 asking tough questions and maintaining my independence
 maintaining my stability and peace of mind

Much of my success has been:
 due to my talent for making a favorable impression
 achieved despite my lack of interest in developing interpersonal skills

Data Control 3
[Performance]
Please give your assessment of how well you contributed to the successful performance of the task.
1. Not good at all ... 7. Excellent 6

Please give your assessment of how well you and the other person together performed the task.
1. Not good at all ... 7. Excellent 6

Please give your assessment of how well you might identify the aesthetics of twentieth-century games.
1. Not good at all ... 7. Excellent 6

[Togetherness]
To what extent, if at all, did you have a sense of being with the other person?
1. Not at all ... 7. Very much so. 7

To what extent were there times, if at all, during which the computer interface seemed to vanish, and you were directly working with the other person?
1. At no time ... 7. Almost all the time 6

[Emotional Reaction]
To what extent did you feel embarrassed, with respect to what you believed the other person might be thinking about you, in the way that you carried out this task?
1. Never ... 7. Almost all the time 5

Form A

Directions
Good morning, test subject. Please follow directions.

Data Control 1
Gender (write in) Male

Indicate group quantity: 1 3 3 4

This apparatus is: friend enemy
My partner is: wholesome chaotic
I am: tender fractious
This console is: wooden malignant
The cake is a: truth lie

Data Control 2
I have been more:
 relationship-oriented than goal-oriented
 goal-oriented than relationship-oriented

I've typically been interested in:
 asking tough questions and maintaining my independence
 maintaining my stability and peace of mind

Much of my success has been:
 due to my talent for making a favorable impression
 achieved despite my lack of interest in developing interpersonal skills

Data Control 3
[Performance]
Please give your assessment of how well you contributed to the successful performance of the task.
1. Not good at all ... 7. Excellent 6

Please give your assessment of how well you and the other person together performed the task.
1. Not good at all ... 7. Excellent 6 *until QBERT brought me to a -3;*

Please give your assessment of how well you might identify the aesthetics of twentieth-century games.
1. Not good at all ... 7. Excellent 5

[Togetherness]
To what extent, if at all, did you have a sense of being with the other person?
1. Not at all ... 7. Very much so. 5

To what extent were there times, if at all, during which the computer interface seemed to vanish, and you were directly working with the other person?
1. At no time ... 7. Almost all the time 3

[Emotional Reaction]
To what extent did you feel embarrassed, with respect to what you believed the other person might be thinking about you, in the way that you carried out this task?
1. Never ... 7. Almost all the time 1 *until QBERT took this to over 9000.*

PS.: I HATE QBERT!!

Other student examples



Nathan Chow and Kashyap Patel
SHINOBI

A modern-day ninja with one purpose:
To rescue **KIDNAPPED** students from a group of **TERRORISTS**

JOE MUSASHI'S MISSION

MISSION 1
In this mission, Joe is tasked with eliminating all of Ken Oh's minions and ultimately Ken Oh. Ken Oh is a fireball-throwing samurai that Musashi encounters at the end of the mission. Ken Oh looks tough to beat at first, until the player discovers that Joe can only damage Ken Oh through this helm.

The flame-throwing Ken Oh Bonus Stage

MISSION 2
After Joe defeats Ken Oh, he infiltrates the enemy's HQ, which is located in a harbor. There, he encounters various green and blue-colored ninjas which are tough to beat. Finally, he must defeat the final boss of the mission: the Black Turtle attack chopper.

Spamming stars at ninjas

Jumping up to defeat enemies



The Evolution of Shinobi

Shinobi (1985)
One of the most well-known and beloved arcade games. It was one of the first because of its novel camera view and more clever enemies. The story follows a lone assassin named Joe Musashi as he fights the Zand Sorokawa empire.

Did you know?
"Shinobi (SEGA)" was originally titled "Joe Musashi as the Right the Zand Sorokawa empire."

Beverage of Shinobi (1993)
The sequel to the first Shinobi game. In this game, Joe Musashi has to fight the Zand Sorokawa empire. After Zand attacks his village, he has to retake it and then fight the Zand Sorokawa empire.

Shinobi III: Return of the Ninja Master (1993)
The third Shinobi game. In this game, Joe Musashi has to fight the Zand Sorokawa empire. After Zand attacks his village, he has to retake it and then fight the Zand Sorokawa empire.

Shinobi III: Return of the Ninja Master (1993)

- The Goons**
- Buccaneer - blocks Joe's attacks with his shields and retaliates by throwing his sword in a boomerang-like fashion
 - Green ninja - blocks Joe's attacks with his two swords and swings his swords when up close
 - Blue ninja - the most deadly, jumps to Joe and tries to slice his head off



Shinobi. Students Nathan Chow and Kashyap Patel.

GAUNTLET

Innovation in Cooperation

Warrior needs food badly!

Since food is limited but required to boost health in the game, players must share food and refrain from destroying other players' food to ensure success. Those with lowest health should have first priority when food is spotted.



Don't waste the magic.

Characters not only differ in appearance, but in skill sets. Each character (Warrior, Wizard, Valkyrie, Elf) makes up for each other's weaknesses and there's specialization in gameplay. The wizard is best in magic but the fastest of the four is the elf.

Elf has eaten most of the food lately.

Players work together to pick up keys for unlocking doors, to lure enemies into advantageous position for easy killing, and to keep player health high enough to survive with food.



I've not seen such bravery!

The arcade cabinet was unusually wide to accommodate 4 players, each player getting their own joystick and set of buttons to mash but only one screen to play on rather than split-screen play of many other multi-player games. (see image above)

Valkyrie - shot the food!

Attacking, using magic, or moving cannot be performed simultaneously, so players have to take turns to keep moving or shooting down enemies, while trying not to shoot allies or food, as they can actually be harmed.

Valkyrie ... is about to die!

Speech synthesizer provides commentary to announce weakened players, while also admonishing those players who choose to sabotage others by shooting food and allies.



Your life force is running out.

Players are allowed to join any game in progress, and any game session can be prolonged with money so long as at least one person is playing the game. (This generated more money than other arcade games.)



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EXIT

Gauntlet. Students Michael Lin and Lucy Zheng.

Discussion

- What colleges, schools, and departments do you represent?
- What comes to mind when you think of “digital pasts” and “digital histories”? How do these themes intersect with your areas of research and interest?
- Do you have ideas for activities, events, programs, partnerships, etc. that retroTECH or the GAL might help facilitate?



retroTECH

