Progress Report

The University of Texas at Dallas

2024

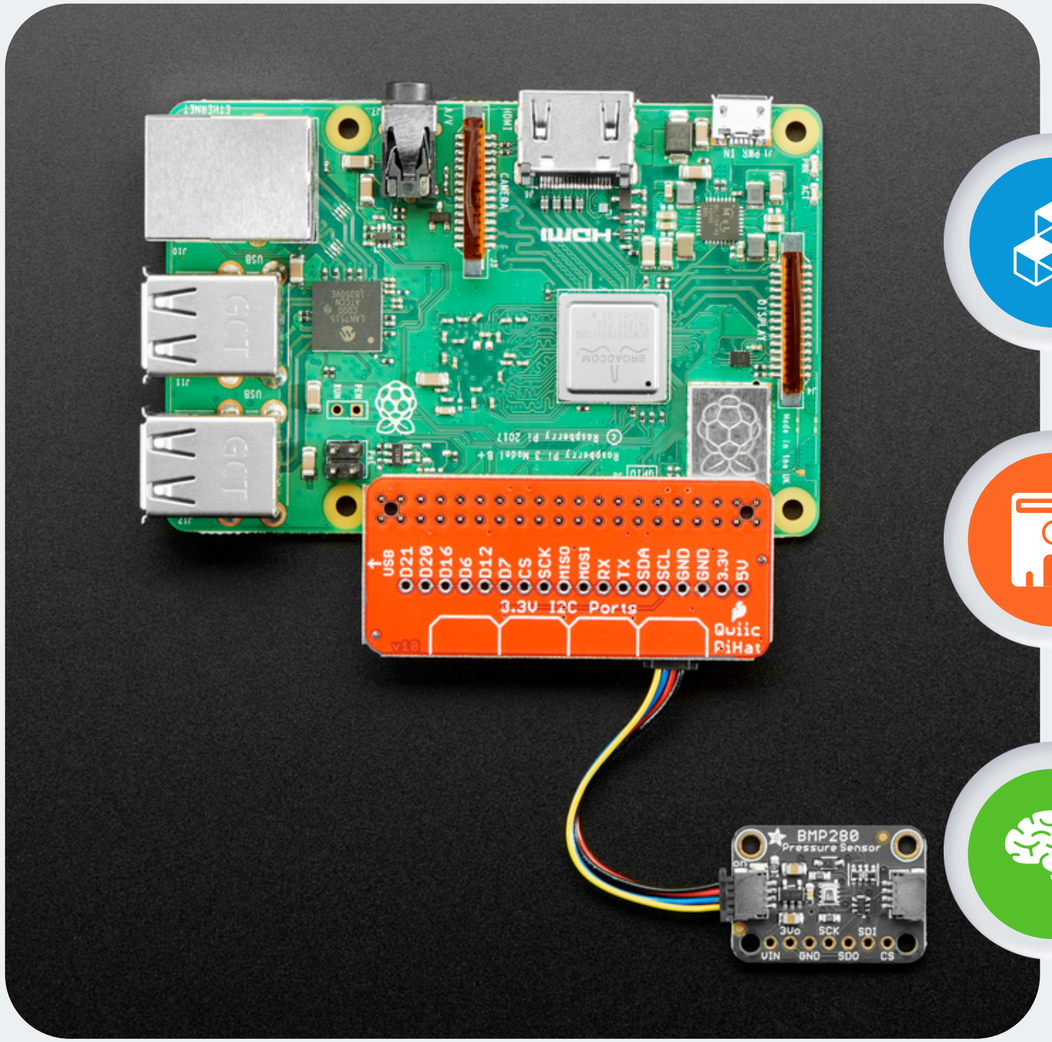
Presented by **Nibiru Panneflek-Cook**

Report Contents

PART 1

Overview

Description



Raziel is an interactive art installation comprised of a cybernetic sensor array and associated interface that enable patrons to build a transactive memory system, a distributed repository of information.

The device can encode, store, and retrieve physical stimuli (i.e., light, sound, position, chemicals, touch, temperature, and harmful substances – namely, water) as data and media.

It also monitors heart rate while outputting sound waves, pulses of light, and haptic vibrations to facilitate neural entrainment, synchronizing brainwaves with external rhythms to induce targeted altered states.

A Holistic Approach

This piece seeks to facilitate comprehensive audits of mainstream notions of identity by examining how they function where the arts, humanities, and technology intersect.

Time-Based Media

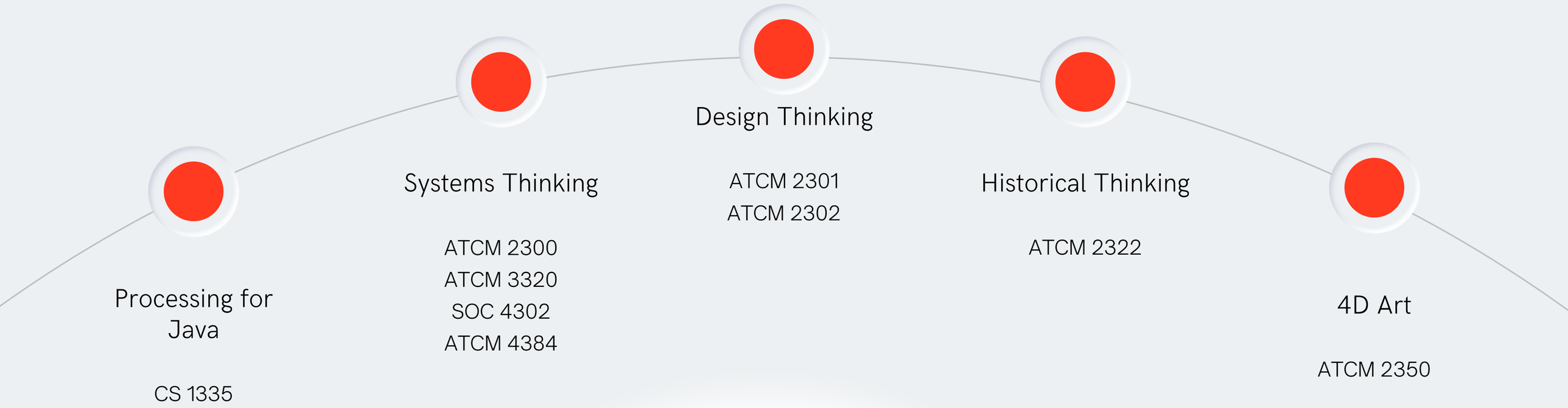
Creative works that reify over an extended period demonstrate the metamorphic and conditional nature of “self.”

Cyborg Feminism

Autonomously constructing social avatars that transcend illusory dichotomies (e.g., the One and the Other, man and nature, animal and machine) is a form of praxis.

Biofeedback Therapy

Leveraging novel tools to understand and enrich mind-body relationships fosters the development of unique experiential knowledge.



Relevant Coursework

Grant Writing

ATCM 3301

Transactive Memory

PSY 3331

User Experience

ATCM 3336

Additive Manufacturing

ATCM 3355

Multimodality

ATCM 4326

Relevant Coursework

PART 2

Progress

Initial Timeline

Pre-Production

- Start: January 29
- End: February 18
- Deliverables
  - Materials List
  - Production Timeline
  - User Flow
  - Design Mockups

Production

- Start: February 05
- End: April 07
- Deliverables
  - PDE Application
  - STL Model
  - PCB Prototype
  - Abstract

Post-Production

- Start: April 08
- End: May 03
- Deliverables
  - Final Iteration
  - Final Presentation
  - Compile Documentation

Timeline Updates

Pre-Production

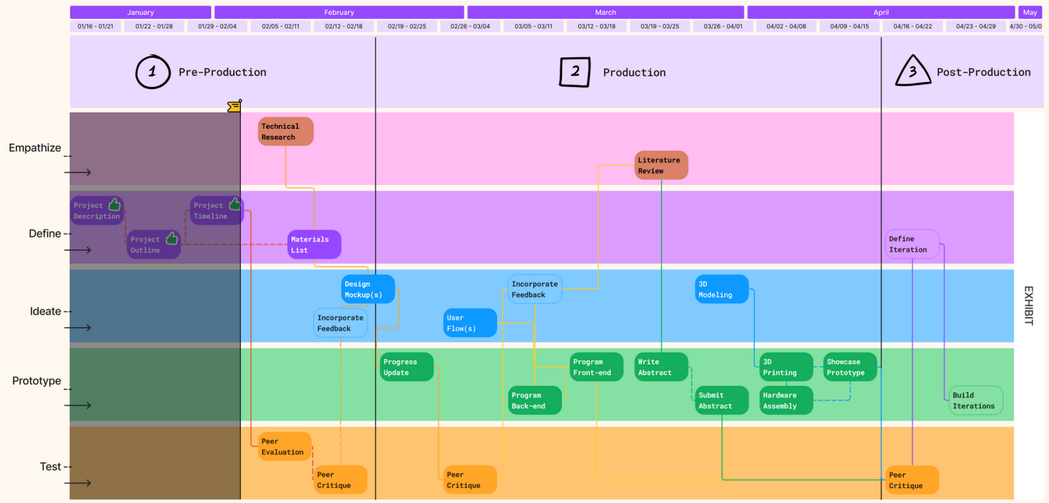
- Complete
  - Materials List
  - Timeline
  - User Flow
- In-Progress
  - Mockup(s)

Production

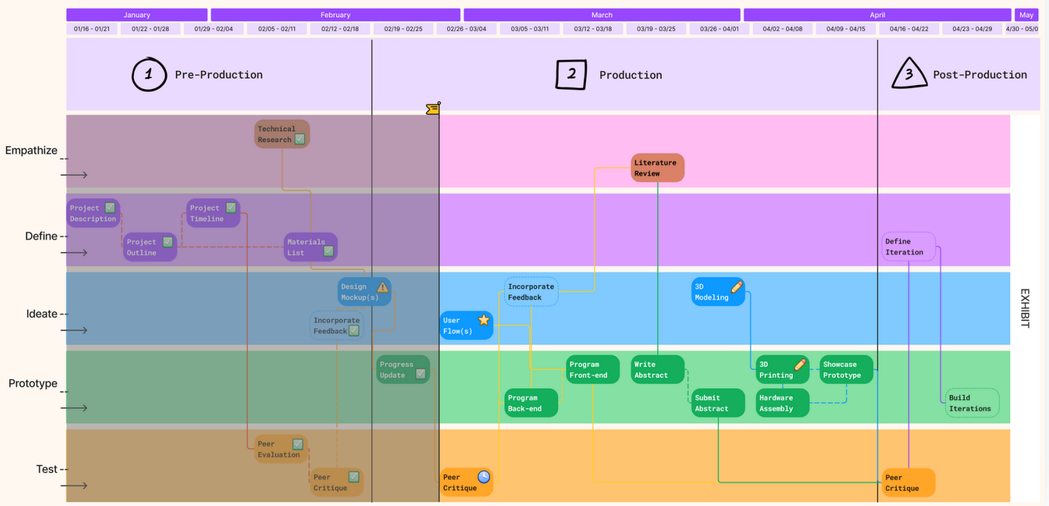
- In-Progress
  - Literature Review
  - Software Prototyping

Post-Production

N/A



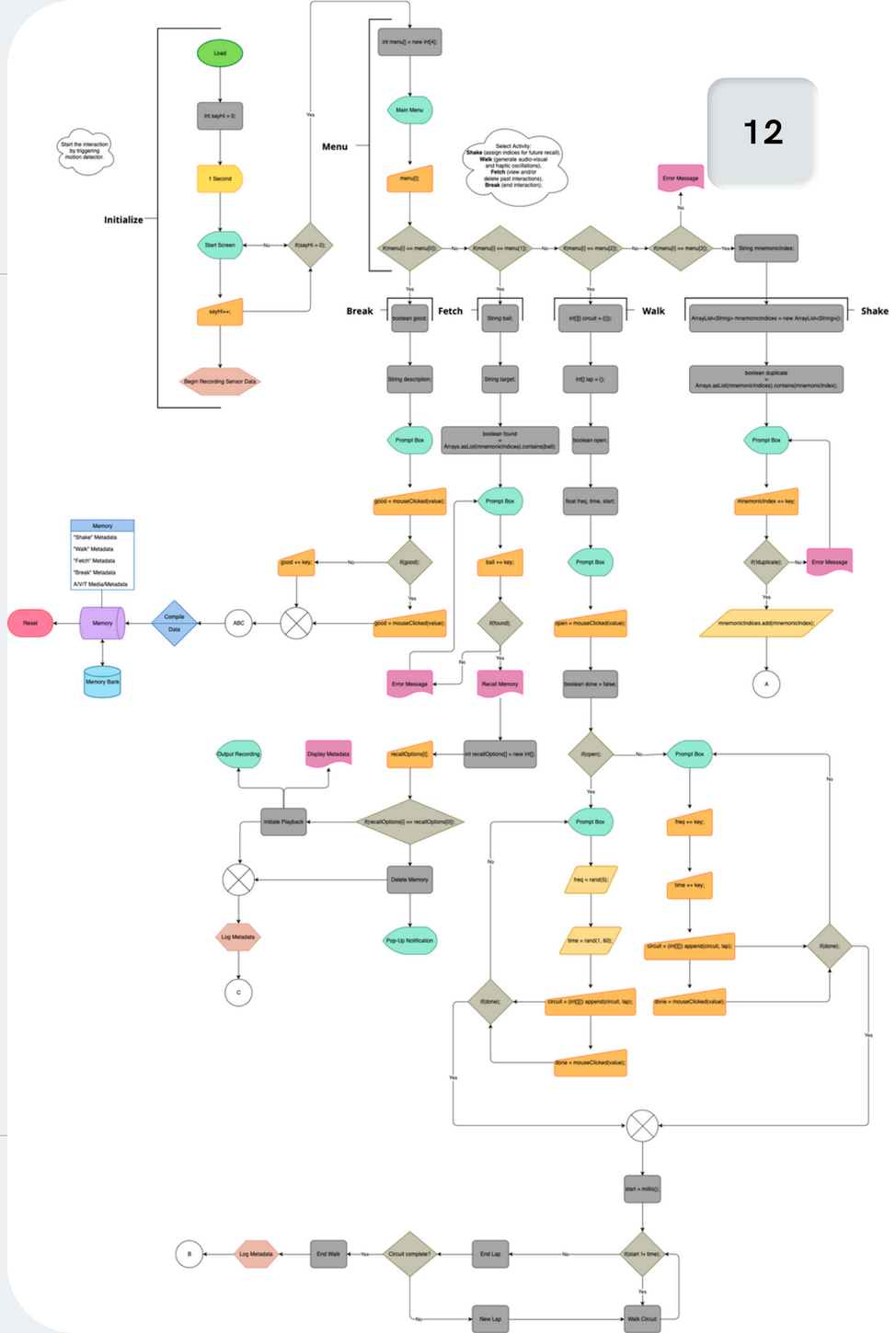
As of February 04



As of February 25

User Flow Diagram

User Flow is a term used in the field of user experience (UX) design to describe the steps that a user goes through while interacting with a product or service.



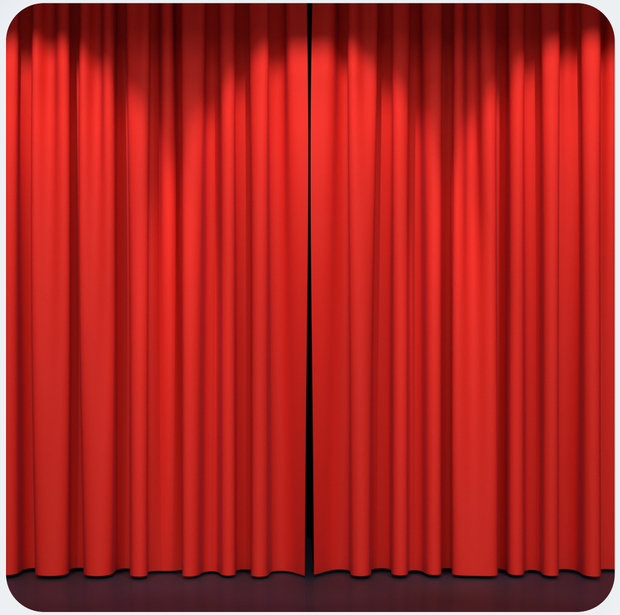
*Excluding Connectors

Materials*

- Input
  - Adafruit 9-DOF Orientation IMU Fusion Breakout
  - Adafruit Mini GPS
  - Flexible USB Swivel Adapter
  - Mini USB Microphone
  - Long Flex Sensor
  - SoftPot Ribbon Sensor
  - Pulse Sensor Amped
  - Adafruit BME688
  - Water Detection Sensor
  - Adafruit APDS9960
  - Ultra Tiny USB Camera
  - Adafruit MLX90640
- Output
  - Adafruit FeatherWing OLED
  - Adafruit TFT FeatherWing
  - Flexible LED Filament
  - Pimoroni Blinkt!
  - Adafruit DRV2605L
  - Vibrating Mini Motor Disc
- Mounting
  - Black Nylon Machine Screw and Stand-off Set
  - White Nylon Machine Screw and Stand-off Set
  - Little Rubber Bumper Feet
  - Adafruit Swirly Aluminum Mounting Grid

PART 3

Upcoming



Deliverables

Multisensor Array

Configure tool that allows the capture and analysis of environmental and biometric input.

Java Application

Design novel signal generator and database management system.

Abstract and References

Conduct a literature review and write a formal summary.

Present Obstacles

Various factors surrounding this project are necessary to account for concerning timeliness and efficiency.

I have not created any hardware mockups or prototypes because the parts are in the process of shipping, making visualization especially difficult.

Managing a 12-hour courseload alongside this project has already proven to be a significantly complex task.

Rhythmic stimulation, in particular rapid or repetitive flashes of light or sound, can potentially trigger seizures in people who are sensitive to these stimuli.

Thank you!

Contact me if there are any questions.

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