**Schedule**

**Friday**

**Saturday**

**Jonathan**

* Game
  + Engine
    - Game logic [11 HOURS] - Jonathan
      * Timing - Jonathan
  + Projection
    - Accurate angle (not warped because projector is on the side) [1 HOUR] - Jonathan
    - Calibration [1 HOUR] - Jonathan
  + Latency [2 HOURS] - Jonathan
  + Misc. [2 HOURS] - Jonathan
  + Multiplayer mode [1 HOUR]

**Aman**

* 88 key midi to 49 key midi
  + Neural net [8 HOURS]
  + Misc. [1 HOUR]
* PDF to MIDI
  + Neural net [8 HOURS]
* Easy, medium, and hard mode [3 HOURS]

**Luca**

* Accurate motion tracking of keys
  + Finding good tracking points
  + Camera processing [6 HOURS] - Jonathan
* Graphics [7 HOURS] - Luca
* Sound effects [2 HOURS] - Luca
* Website?
  + Score publishing [6 HOURS] - Luca
  + Sharing midi files [3 HOURS]  - Luca
  + Midi processing online [3 HOURS] - Luca

Tasks

* 88 key midi to 47 key midi
  + Neural net [8 HOURS] - Aman
* PDF to MIDI
  + Neural net [12 HOURS] - Aman
* Accurate motion tracking of keys
  + Camera processing [6 HOURS] - Jonathan
  + Latency [2 HOURS] - Jonathan
  + Misc. [2 HOURS] - Jonathan
* Game
  + Projection
    - Accurate angle (not warped because projector is on the side) [1 HOUR] - Jonathan
    - Calibration [1 HOUR] - Jonathan
  + Engine
    - Timing [4 HOURS] - Jonathan
    - Game logic [7 HOURS] - Jonathan
    - Graphics [7 HOURS] - Luca
    - Sound effects [2 HOURS] - Luca
* Website?
  + Score publishing [6 HOURS] - Luca
  + Sharing midi files [3 HOURS]  - Luca
  + Midi processing online [3 HOURS] - Luca

Jonathan - 18 hours

Aman – 20 hours

Luca – 15 hours – 12 optional

Things to do before we go:

* Plan time exactly for each person
* We should write the speech that we give the judges
* Plan technical aspects

Technically:

* Record video
* Upload to server
* Facial recognition on server [X]
* Automated video editing on server [X]
* Download to phone

Speech:

**Criteria:**

**MUST HAVE:**

* **Sufficiently complex in terms of programming - 3 points**
* **Easy (and ideally cool) to demonstrate and understand - 3 points**

**WOULD BE NICE:**

* **Machine learning - 2 points**
* **VR/AR - 1 point**
* **Helps marginalized/in need group - 1 point**

Virutal piano that would have keys attached to fingers and would feel incredibly realistic

* Would have record and playback options
* Player piano

Rock band type vr thing that would teach you how to play piano

**IDEAS WORTH DOING**

**iPhone project for people with Autism - shows information on conversation [9/10]**

**iPhone PROJECT FOR PEOPLE WITH ALZHEIMERS**

* **Shows information on recent faces [8.5/10]**
* **Shows information on recent objects**
* **Shows information on tasks**

***ACTUALLY COVERS ALL FIVE CRITERIA***

**Clickbait detection [8/10]** **- COULD BE OK ACTUALLY**

**Maybe user sets current goal/mode (like productivity, etc.) and other content is filtered out**

**[6.5/10] - DECENT BUT REALLY HARD TO DEMO**

Wrist band that keeps track of location, heartrate, sleeping patterns of user

Detects relapse using neural network

Cloudsourced data, would inform caretaker once patient dispatched from rehab

**IDEAS THAT ARE GOOD BUT REALLY HARD TO IMPLEMENT**

Grading essays using neural nets + Creating questions from reading textbook. Also find where the errors in answers are. [6/10] **- NOT DONE BUT HARD AF**

General AI for playing games [6/10] **- HARD AF**

Pen that improves handwriting with neural nets [6/10] **- HARD AF**

**IDEAS ALREADY DONE**

Apps for blind people that turns image to text read aloud **- DONE**

Bot that learns to appreciate good movies/video [4/10] **- KINDA DONE, ALSO HARD AF**

Phone case with braille [7/10] **- DONE - WON MAJOR HACKATHON**

Shoes that use neural nets to correct walking/feet problems (limp, etc.) - change shape and correct better [4/10] **- DONE - WON MAJOR HACKATHON**

Toothbrush that helps you brush your teeth better - figures out what you’re not brushing well [5/10] **- SOMEHOW DONE - WON MAJOR HACKATHON**

Text to speech for deaf people (maybe glasses) **- DONE - ACTUALLY WON PENNAPPS**

**SHITTY/EXTRA SHITTY IDEAS**

Autism translator [5.5/10] **- OFFENSIVE AF AND SHITTY**

Thing on bike that helps people learn to bike [2/10] **- XTRA SHITTY**

Thing that helps amputees to walk [1/10] - **XTRA SHITTY**

Kid investor app that steals their strategies [3/10] **- XTRA SHITTY**

Paint maker; figures out color of paint and makes paint color [4.5/10] **- XTRA SHITTY**

News summary creator [4/10] **- SHITTY**

Stress ball for rehab patients that learns relapse patterns and alerts caretakers

Could also take eating patterns, sleeping patterns as input

Good for mental health patients (no longer using) **- SHITTY**

“Cleaning robot with positive and negativity reinforcement” [-5/10] **- SHITTY**

Make a network that can mimic the content of one essay and the style of another [4/10] **- SHITTY**