MASTERING THE ART OF SPINNING

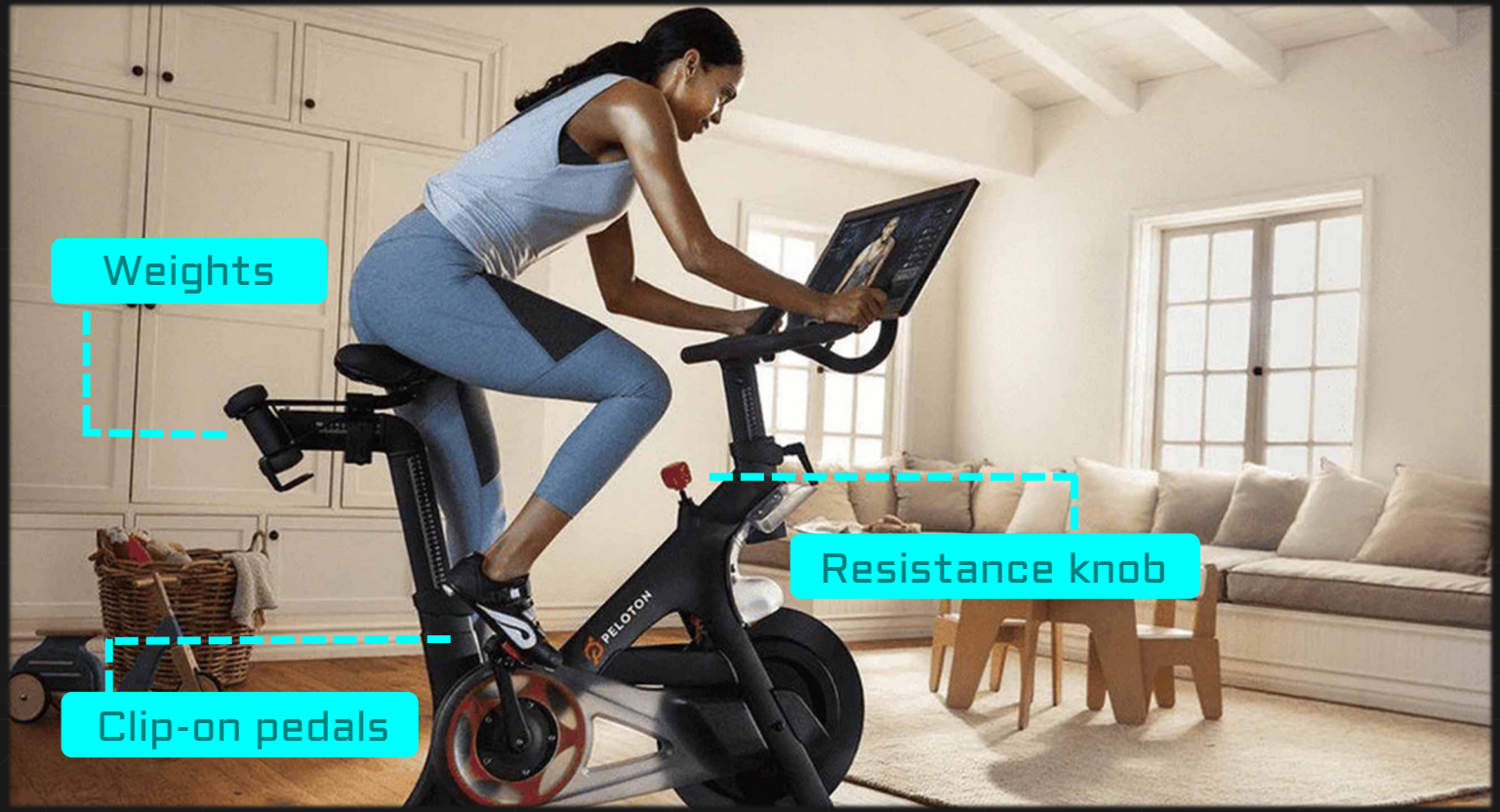
DSI39 | **SHEILA KOO**

1

WHAT IS SPIN?

aka RHYTHMIC CYCLING

POWER+FLOW


Weights
Resistance knob
Clip-on pedals
PELOTON

REGULAR

PULSE

PUSH

SEXY
CORNERS

2

BACKGROUND

20% GLOBAL FITNESS MARKET

did spin classes in 2019 (LesMills, 2019)

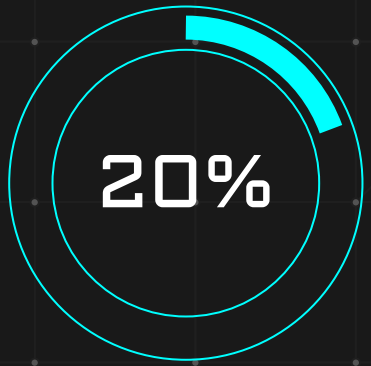
2ND MOST POPULAR

group exercise in Singapore (Virgin Active, 2022)

45,000 members

Revolution Singapore (Chiew, 2022)

TREND

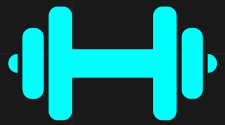


Global fitness market did spin
(LesMills, 2019)

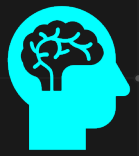
Most popular group exercise in Singapore
(Virgin Active, 2022)

4 studios in 2 years
(Chiew, 2022)

BENEFITS



PHYSICAL HEALTH



MENTAL HEALTH

LOOK FIT

CHALLENGES

r/xxfitness · Posted by u/ttiiffyyy 3 years ago

How do I improve my coordination for rhythm-based indoor cycling class?

For background information, I can dance on beat just fine, but apparently not on a stationary bike...

when the moves get complicated (fast paced off and on saddles, upper body involved) my legs tend to go out of beat and I feel like I can only catch up with one half of my body and not the other.

cactusgirl69420 · 2 yr. ago

Ive been spinning for YEARS now and I still struggle to stay in rhythm. I was definitely born with two left feet. But exercise is exercise! As long as you're not hurting yourself I'd say just enjoy the music and enjoy moving your body!

My legs felt like lead and I struggled to keep on the beat in the first class. *Psycle* is all about cycling to the rhythm and I just couldn't seem to find it.

RISK OF RHABDOMYOLYSIS

rhabdomyolysis noun

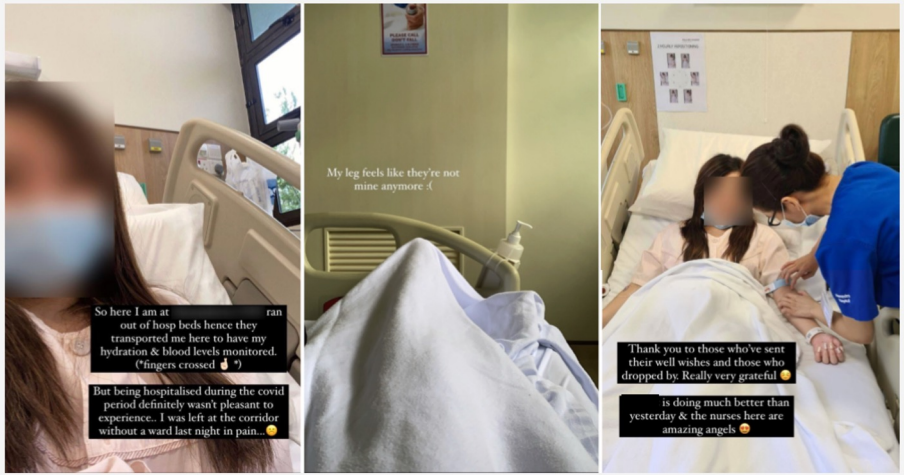
rhab·do·my·ol·y·sis

A breakdown of muscle from extreme physical exertion. Can cause kidney failure and death.

2 S'pore women hospitalised with potentially fatal muscle breakdown after a spin class

Rhabdomyolysis, a condition where muscles are injured or overworked and start to break down, may ultimately lead to kidney failure and even death.

Nigel Chua | February 28, 2021, 12:03 PM



PROBLEM STATEMENT

Though spin has become an increasingly popular workout, some are resistant to try it as they find the complexity intimidating. Those who tried might find it tough to catch the beat while getting the choreography right. Some who were unable to withstand the intensity of spin suffered from rhabdomyolysis, which can be fatal.

Solution: Gamify spin using machine learning model

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WORKFLOW

WORKFLOW

01 DATA COLLECTION

02 DATA CLEANING

03 EDA

04 MODELLING

05 DEPLOYMENT

WORKFLOW

1. Collect data by filming
2. Convert movements into coordinates using Mediapipe
3. Cleaning
4. EDA
5. Modelling
6. App development

CLEANING

Mediapipe and Librosa
No. of classes – what are they? Perhaps show photos or video demo?
No. of coordinates/dataset size
Coordinates – what are they and where are we focusing on

EDA

No. of classes
No. of coordinates/dataset size
Coordinates – what are they and where are we focusing on
Observations of movements
Observations of soundtrack
Observations of the relationship between the movements and soundtrack
How to determine if a rider is on beat?

FEATURE ENGINEERING

Feature importance
Use Keras? and find features

MODELLING

Baseline model (out of others we've picked) – what is it (layman terms) and why?
Scores
Hypertuning, feature selection
Final model score

DEMO

CONCLUSION

* Link back to problem statement!!!

LIMITATIONS

asd

RECOMMENDATIONS

See if I can come up with anything actionable with a framework

REFERENCES

(Virgin Active's recent Singapore Fitness Trends Study 2022)
https://www.asiaone.com/lifestyle/fitness-study-shows-8-out-10-singaporeans-exercise-once-week-our-thoughts
(SingHealth) https://www.singhealth.com.sg/news/tomorrows-medicine/rise-in-cases-of-muscle-breakdown-from-spin-cycling-study