



**TALENT
PAVILION**

Innovation Showcase – NFT Project

Singapore, November 2022



FinTech Lab
School of Computing

Agenda

- Artificial Intelligence (AI)
- Neural Networks & Machine Learning
- AI Engines you can use today
- Creating Art with AI
- → Your own artwork

- Blockchain and Web3.0
- Non-fungible Tokens (NFTs)
- Opportunities using NFTs
- Minting NFTs
- → Your own NFT



Uli

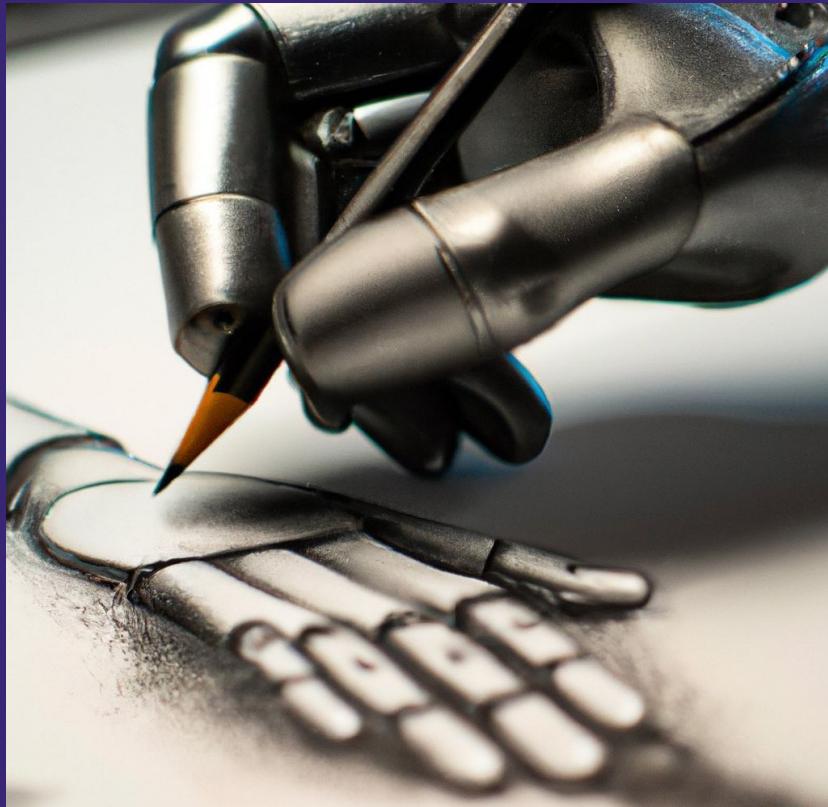


Vignesh



Shashank

Part 1: Artificial Intelligence & Creating Art



Nothing you are about to see is real.



The following document contains:

- Photos that are not real photos
- Paintings that are not real paintings
- People and places that do not exist

All images in this slide deck were created by OpenAI's DALL-E 2 and Wombo.



“Singapore in the
year 2065,
concept art”



**“Raffles
Institution,
campus as of
2065”**



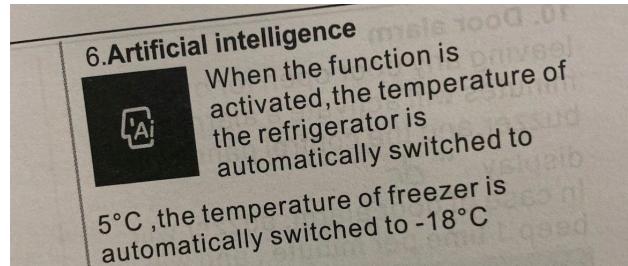
“I was the first knowledge worker whose job was threatened by a machine” Garry Kasparov



PHOTOGRAPH: STAN HONDA/GETTY IMAGES

Artificial Intelligence

- Intelligence Demonstrated by Machines
- AI vs Machine Learning
- AI Effect: the moment we understand how it works, we no longer think of it as “AI”





“Marina Bay
Sands having
common ivy
growing all over
it”



“Police droids in
downtown
Singapore”



“A couch in the
shape of a
durian”



“An ancient
Etruscan vase
with the Coca
Cola logo on it”



“Wall painting of an Egyptian tomb, showing people using smartphones”



“Hands of a
scientist,
showing the
remains of a
dragon skull”



“A Japanese girl
smiling at a
muppet,
close-up
portrait.”



**“Surreal painting
of horses racing
down a beach”**

DALL·E 2 can create original, realistic images and art from a text description. It can combine concepts, attributes, and styles.

TEXT DESCRIPTION

An astronaut Teddy bears A bowl of
soup

that is a portal to another
dimension that looks like a
monster as a planet in the universe

knitted out of wool spray-painted on
a wall made out of plasticine





OpenAI: GPT-3

- “Generative Pretrained Transformer” version 3
- Neural network, leverages deep learning to generate human-like text -> it ‘just’ predicts text
- OpenAI research company: Elon Musk, Reid Hoffman, Sam Altman
- 175 billion trainable parameters, it ‘read’ 45TB of books, Wikipedia, and the internet

[Overview](#)[Documentation](#)[Examples](#)[Playground](#)[Save](#)[View code](#)[Share](#)

...



Prompt

Explain the concept of artificial intelligence and machine learning to a non-technical person in a few sentences.

Artificial intelligence and machine learning are the study and practice of making machines and computer programs that can perform tasks that normally require human intelligence. Machine learning is a subset of artificial intelligence in which computer programs are trained to make predictions from data without being explicitly programmed.

What are the benefits and concerns of artificial intelligence and machine learning?

The benefits of artificial intelligence and machine learning are that they can perform tasks more efficiently and accurately than humans. The downsides are that they may be biased and not able to make decisions that a human could make.

[Generate](#)

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Huxley

OpenAI Bot based
on GPT-3



Telegram

Huxley bot

Joe Chip I'm keen to get started listening to Bach. Do you have any advice where to start? 10:34 PM

Huxley Do you have any particular piece in mind? 10:34 PM

Joe Chip no, not at all 10:34 PM

Huxley Okay, well I would suggest you start with his Brandenburg concertos. 10:34 PM

Joe Chip interesting... why do you suggest this one 10:34 PM

Huxley Because it is a good introduction into Bach's music. It is a series of 6 concertos that are quite different from each other and will give you a good overview of his music. 10:34 PM

Joe Chip I am told his music is super complex 10:35 PM

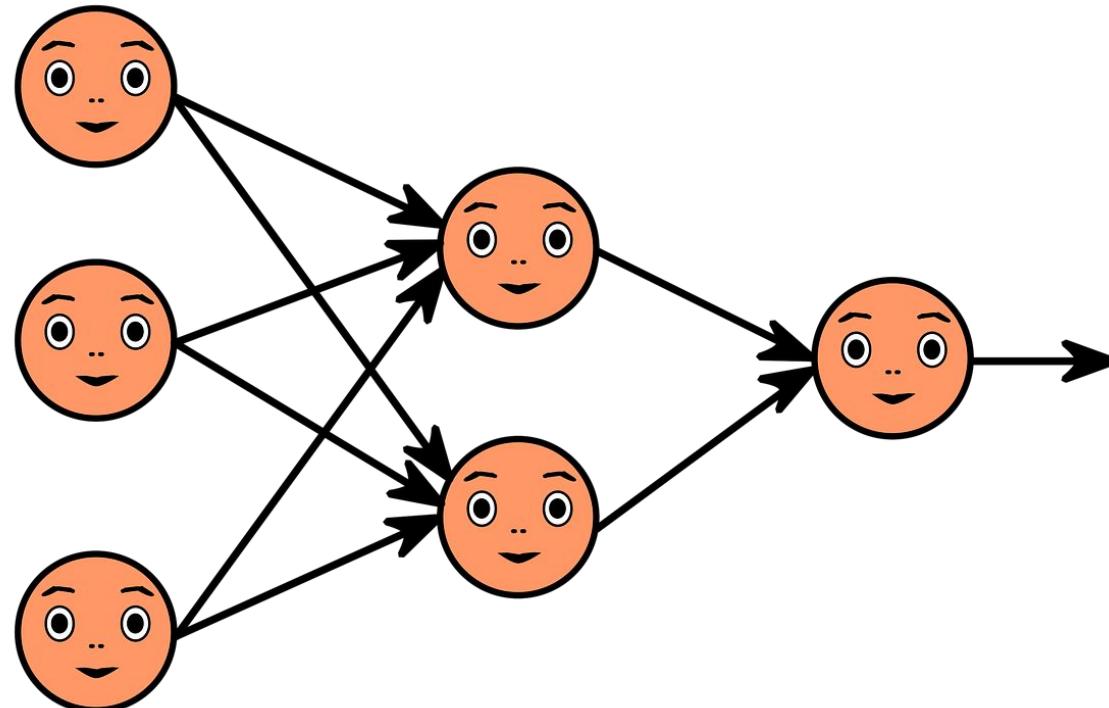
Huxley That is true, but the Brandenburg concertos are very accessible for anyone. 10:35 PM

Joe Chip this is a secular piece, right? What if prefer to 10:35 PM

Write a message...

A screenshot of a Telegram conversation with the bot "Huxley". The user, "Joe Chip", asks for advice on where to start listening to Bach. The bot suggests starting with the Brandenburg Concertos, describing them as a good introduction due to their variety and accessibility. The user notes that Bach's music is complex, but the concertos are accessible. The bot clarifies that the concertos are secular pieces.

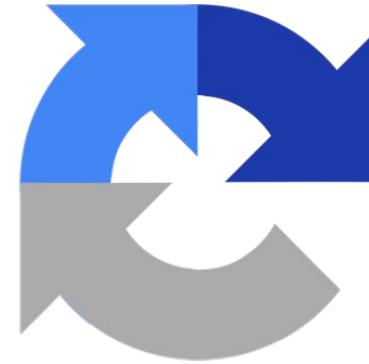
Artificial Neural Networks



Training The Network

Select all images with
cars
Click verify once there are none left

VERIFY

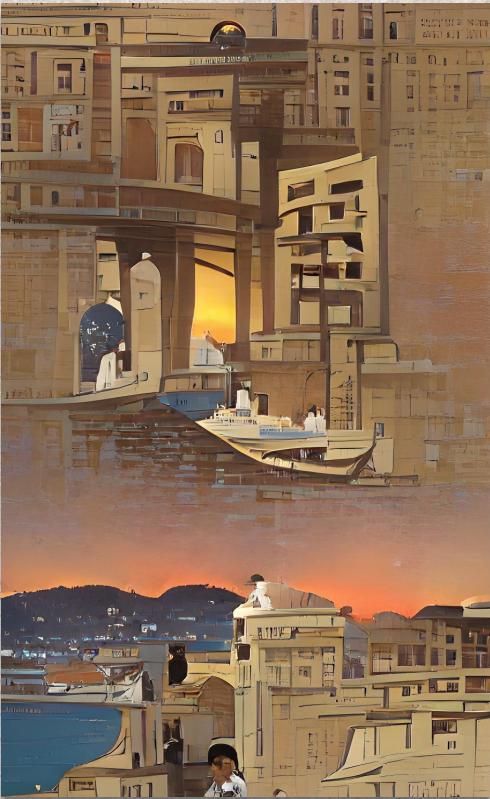


reCAPTCHA

PICTURES OF THE FLOATING OF THE WORLD

An Art Collaboration Between Human and AI

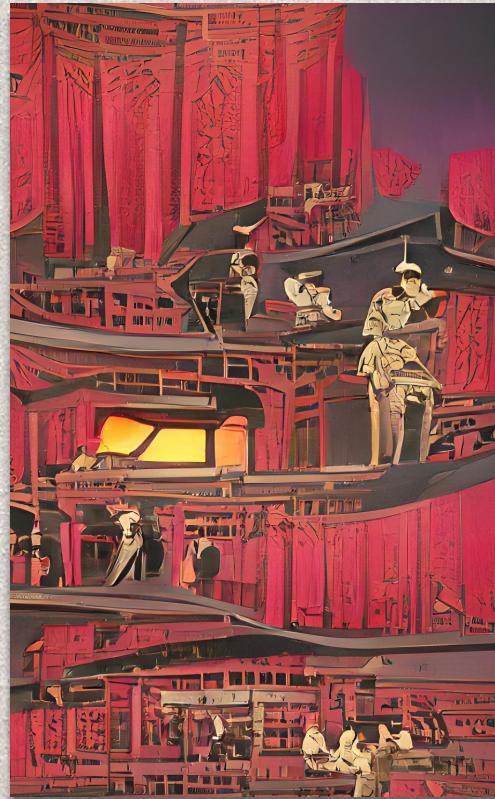
<https://apigeek.net/art>



Italy



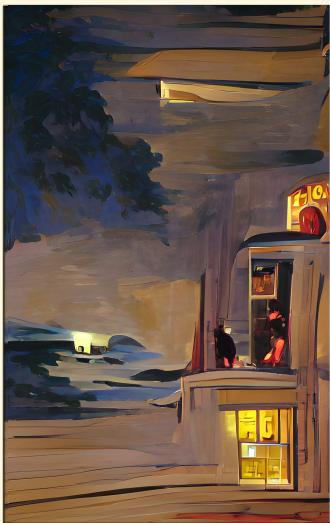
After Work



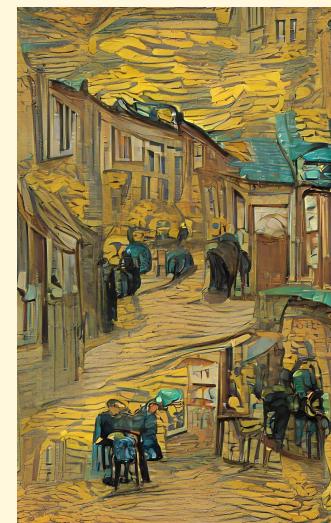
Night at the Opera



Claude Monet (b. 1840)
The Lake, 2021



Edward Hopper (b. 1936)
The Storm, 2021



Vincent van Gogh (b. 1853)
Street Life, 2021



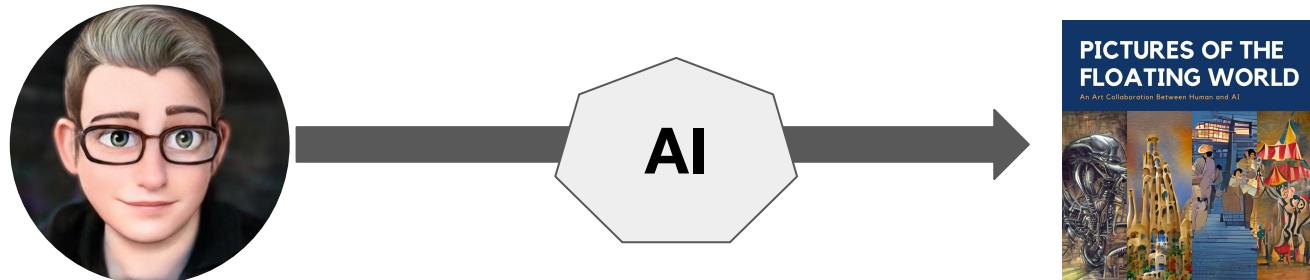
The New World – Retro-Futuristic Art

How?

- Use AI to translate text descriptions (“prompts”) into images
- Use another AI to create those prompts
- Collaborate with a hyper-intelligent artificial person to come up with ideas



“Performance Enhancement Drugs”



Creating Art From Text

<https://app.wombo.art>

The screenshot shows the Wombo app interface. At the top, there's a dark header bar with a back/forward button, a search icon, and a plus sign. Below it is a toolbar with a magnifying glass icon. The main area has a dark background.

Enter prompt: Never ending flower (19/100)

Below the prompt is a row of four buttons: Sunset cliffs, Never ending flower (which is highlighted), Fire and water, and DNA tornado.

Art Style:

Dark Fantasy	Psychic	Pastel	HD

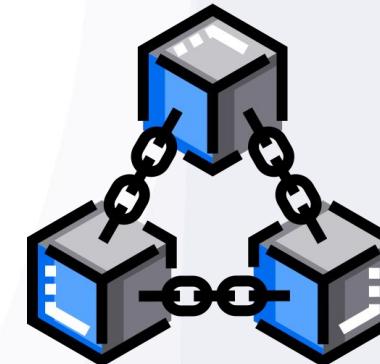
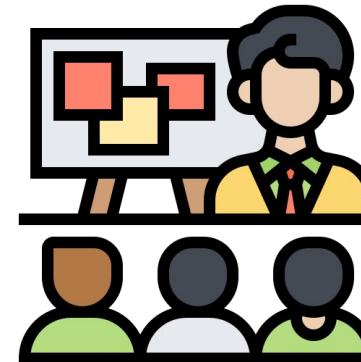
Vibrant	Fantasy Art	Steampunk	Ukiyoe

Create

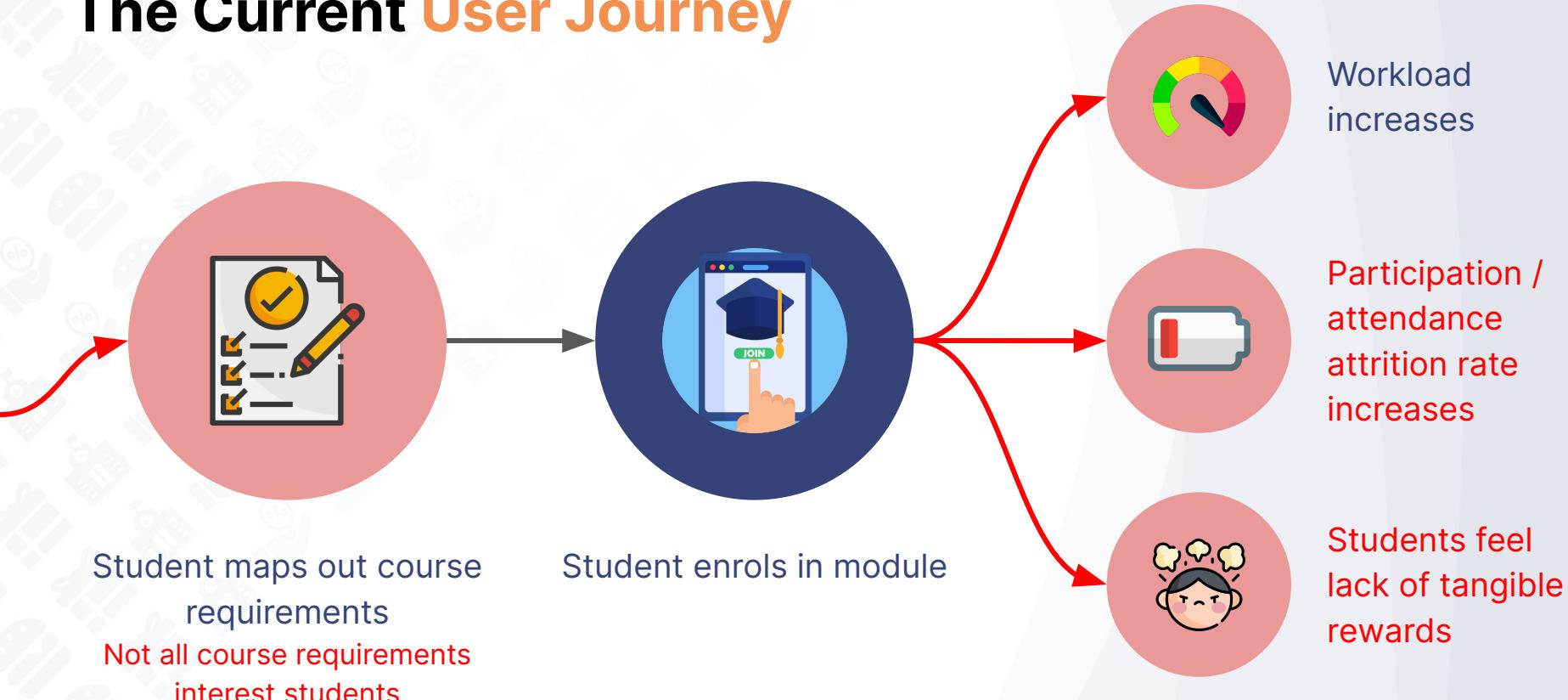
To the right of the interface is a large preview window showing a vibrant, colorful artwork. The scene depicts a fantastical landscape with floating pink flowers, a small figure in the distance, and a bright horizon. The bottom right corner of the preview window contains the "wombo.art" logo.

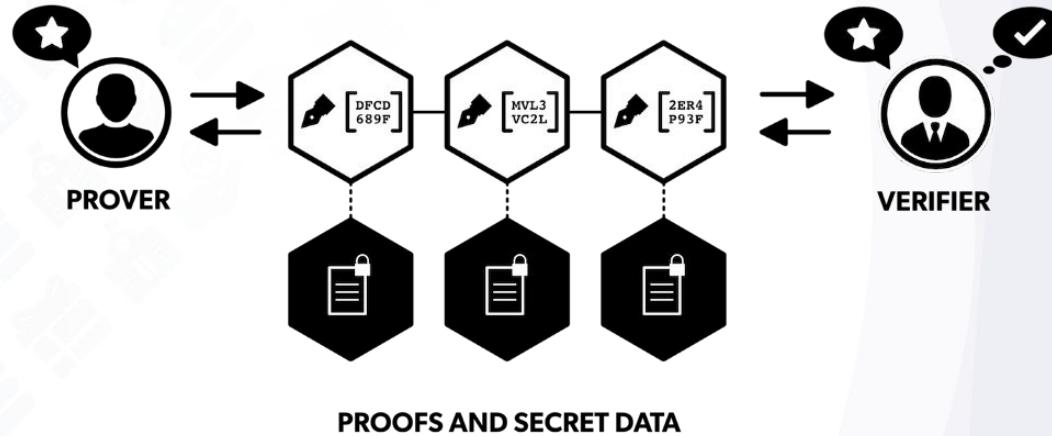
The Problem

A Glaring Gap in Education about Blockchain & Blockchain in Education



The Current User Journey





Blockchain technologies are being used to create better prover-verifier models

What is Learn-to-Earn?

Combines the best of three other NFT use cases...



Like-to-Earn



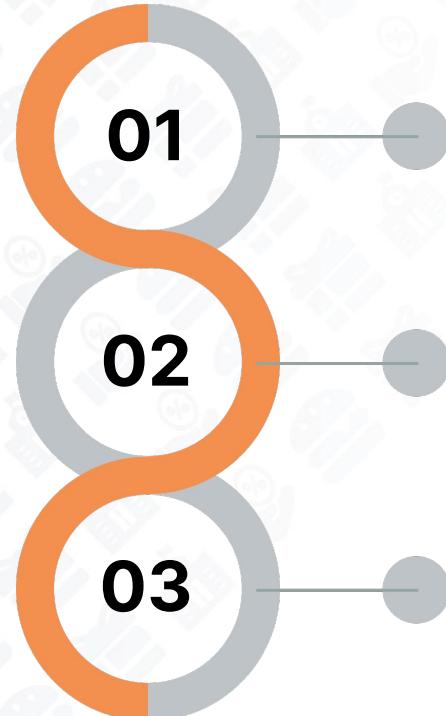
Discount Entitlement



Record Storage

...into a use case that fits our Lab's vision.

The Priorities of Learn-to-Earn

- 
- 01
 - 02
 - 03

Incentivise learning

Use ERC-721 Tokens to accreditify active learning participation (quizzes, assignments, etc.) → Claim rewards at campus retail and F&B.

Incentivise class participation

Adopt a similar model to gamification (like Coursemology) to encourage students to participate in a cohesive way.

Exposure to alternate use cases of tokens

Positive reinforcement, creative collaboration, blockchain education and loyalty programs.

Token Name

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Morbi eget massa enim.

Collected 25/10/2022, 9:41 PM

96 total owners

[View on Etherscan](#)

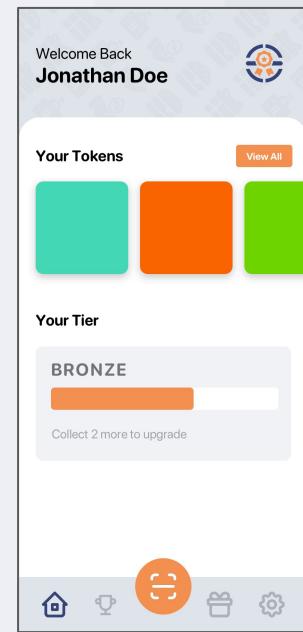
Introducing



Education Engagement. On the Blockchain.

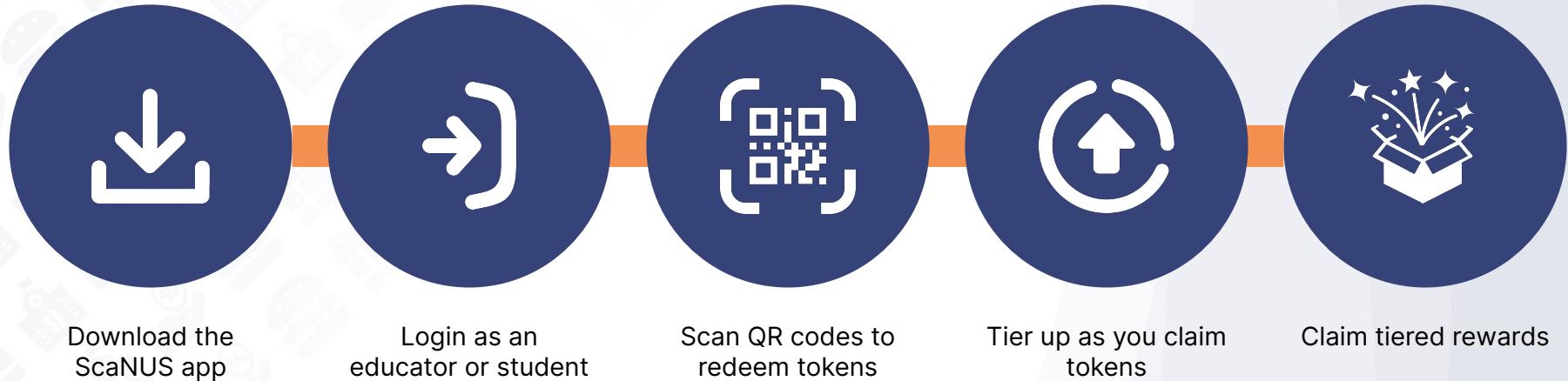


Scanus
Scanus is a blockchain-based platform designed to facilitate education engagement. It allows users to collect tokens for various educational activities, such as attending lectures or participating in group projects. These tokens can then be traded or used to unlock exclusive content. Scanus is built on the Ethereum blockchain, ensuring transparency and security. The platform is currently available as a mobile application and a web-based dashboard.

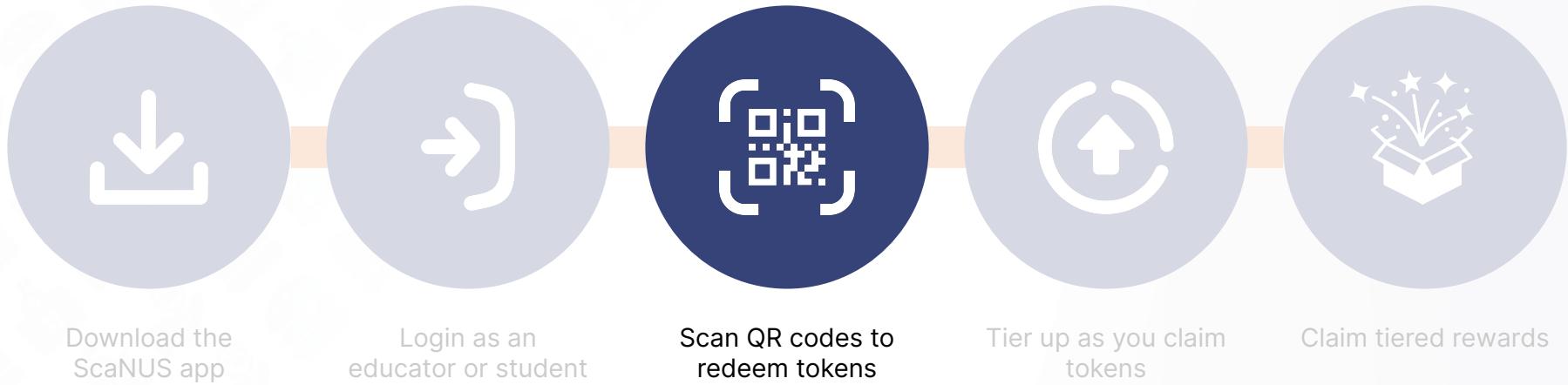


FinTech Lab
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How ScaNUS Works



How ScaNUS Works



ScaNUS Features



Built on
Ethereum



MetaMask
Authentication



Tier-Based
Rewards System



Student/Token
Leaderboard

Quiz/Assignment Attempts

Class Attendance

Course/Module Completion

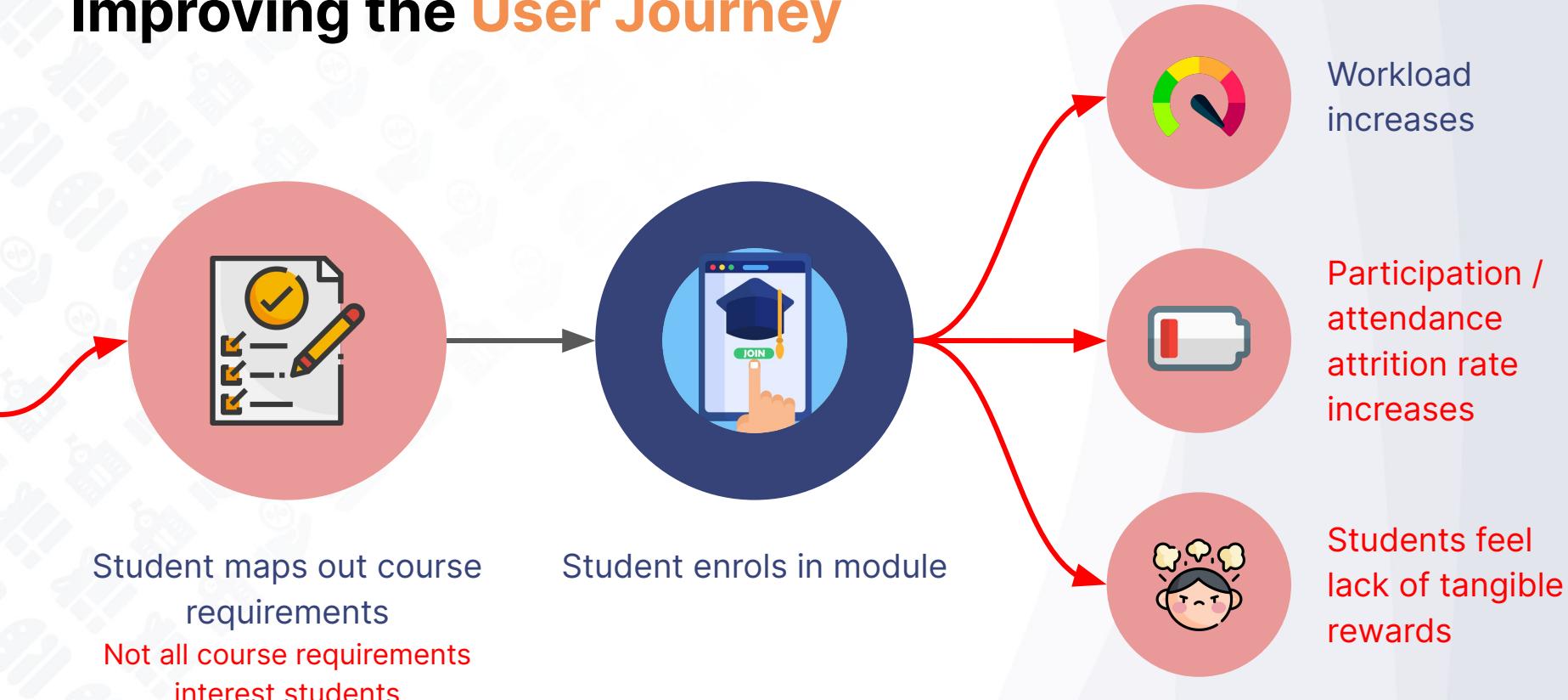
Ranking in Module Contests

Vacation Project Completion

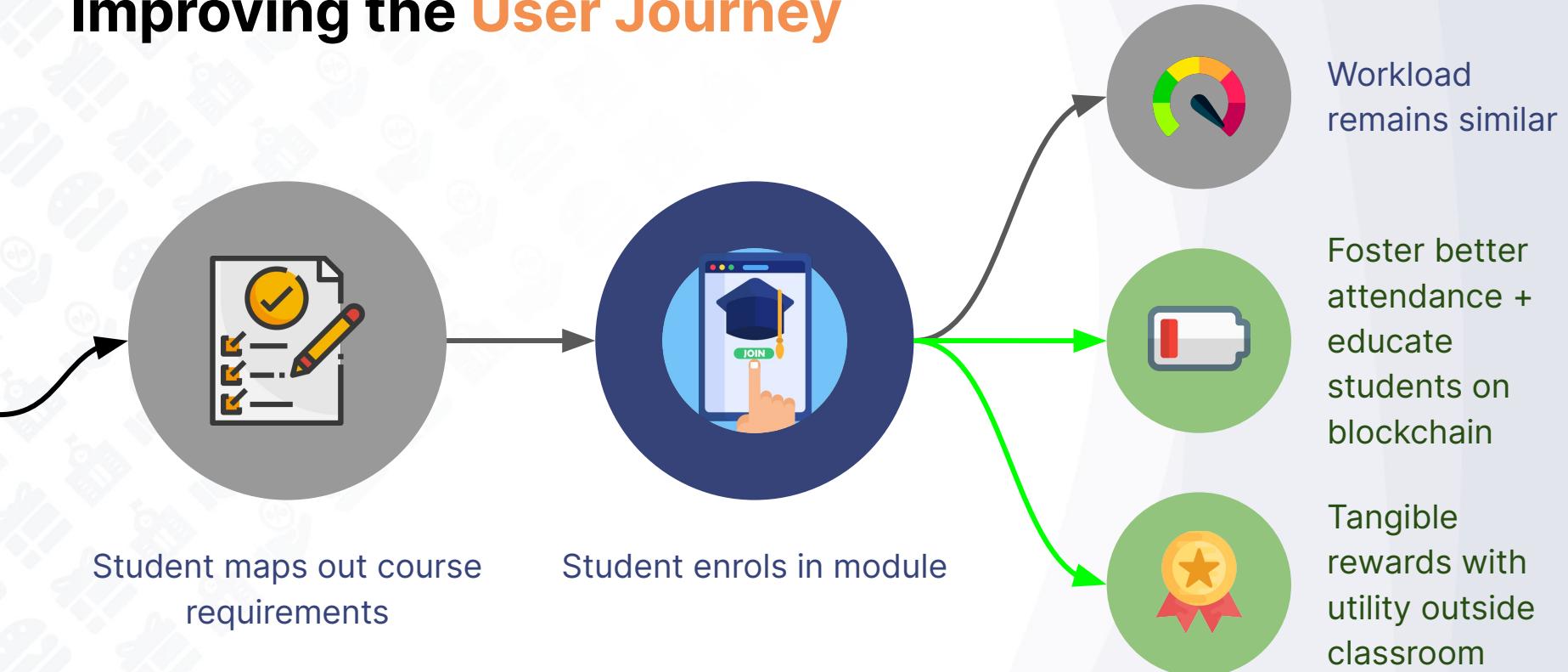
Dean's List Certification



Improving the User Journey



Improving the User Journey



Student maps out course requirements

Student enrols in module

Workload remains similar

Foster better attendance + educate students on blockchain

Tangible rewards with utility outside classroom

Interested to Learn More?

Scan Our Contact Cards



Shashank



Vigneshwar