

Connectome

**A technology platform to realize
human-like AI assistant, “Virtual Human Agent“**

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Whitepaper : Version1.0.2

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Vision

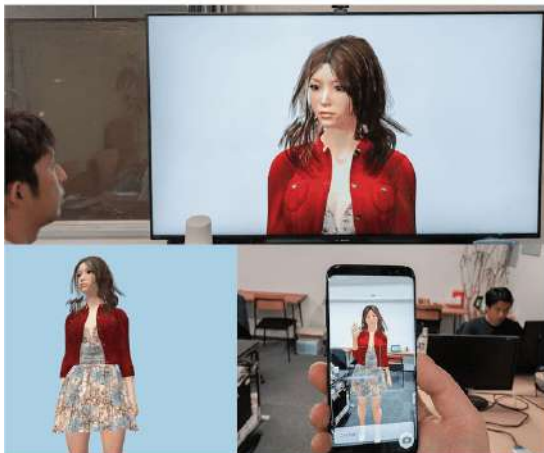
Connectome allows the users to interface with a familiar AR-enabled Virtual Human Agent (VHA) that can behave like humans such as detecting objects, recognizing sounds and reacting in real-time across devices and locations.

Connectome is an ambitious project that will provide a seamless user experience between their home, place of work and all the places in between including vehicles, shops and transportation hubs.

The world has transitioned from personal computers to smartphones, and today we see new devices like smart speakers emerging. Now, VHA will be the next-generation of interface that can naturally communicate with humans.

In order to make VHA more widespread around the world, we provide creators with a platform for the development of VHA and a blockchain-based distributed marketplace. This allows individuals and corporations to use VHA to make use of services in the real world and the virtual world. The possibilities are endless -- VHA could be used for entertainment like games, for concierge applications, or to act as a friend that chats with you.

Virtual Human Agent



Background/Industry Overview

1. AI and data

A range of devices and hardware like self-driving cars, drones, and smart speakers are now Internet-enabled, creating an explosion in the types and quantity of data transacted online. A form of “AI Everywhere” will come to be installed in devices and used to process this data in real time.

A key aspect of this process will be creating systems for automating the use of data and AI in a reliable way. As these countless devices communicate in real time and have their data processed by AI, the core of the Internet will involve communications between machines.

2. Interface

Changes in interfaces are also expected. The world has transitioned from personal computers to smartphones, and today we see new devices like smart speakers emerging. AI speakers like Amazon Echo and Google Home will come to be used with more frequency in homes, automobiles, and shops and function as optimized agents for their human users. For this to happen, AI must further evolve and information inputs be further refined to pinpoint user conditions and preferences. To that end, users must be able to trust AI and feel comfortable providing it with more data. An infrastructure in which the user population can further trust AI is needed. For this to happen, interfaces must become even more humane and human-like. We refer to these interfaces as VHA.

Around the world, human interaction interfaces that are modeled on humans are being increasingly researched.



VHA refers to Human-like characters that employ an AI model that can recognize objects and video and make decisions. For these interfaces to be more relevant to the user, they must feel familiar and encourage the user to provide more information to the AI model.

According to research by the University of Southern California, having human respondents answer questions from Human-like characters resulted in a 17% improvement in response rate and a 19% increase in response speed when compared to audio prompts.¹

These techniques are also being tested in the fields of medicine and training. The University of Rochester has launched a project to improve the conditions of people with autism by having them communicate with Human-like characters. Over 60 percent of patients responded that a Human-like character was easier to talk to than an actual human.²

A health simulation company, Kognito has provided a service that allows medical students to communicate with virtual patients via a computer. This lets students learn about what reactions patients might give them, thereby improving their communication skills.³

3. Infrastructure

Telecommunications carriers are underway with measures to make 5G the de facto standard by 2020. As telecommunications carriers and the wider infrastructure are shored up, device manufacturers, automobile manufacturers, urban planners, and other operators will begin offering various services and business models based around 5G.

5G will allow for the transmission and receipt of large volumes of data in real time.

This will lead to the following:

First, software and other content will be updated dynamically and in real time.

For example, complex game apps that make use of video and other rich data require having software on the end-user's computer, smartphone, smart glasses, or other edge device, and have processing performed both on the device and the cloud. With 5G, large volumes of data can be sent in real time, meaning that the majority of functionality for a service could be allocated on the cloud or "fog." This would mean the quality of the content would be dramatically better.

The second benefit would be drastic speed improvements in data synchronization between servers and devices. This would allow for joint projects, experiences, sharing of data, and other ventures in real time with large numbers of users.

In this context, the end-user's computer, smartphone, or device would act mainly as a viewer on that content. As processing on edge devices like glasses becomes more simplified and they are priced more affordably, these devices, along with the AR functionality they offer, are expected to become much more mainstream.

Given that VHA mimic human behavior, there is considerable demand for them to have improved expressive qualities. Insofar as they interact with humans via various devices, they must also be able to run in real time on these devices.

Opportunity

Advances in AI, data, interfaces, and infrastructure will create more contexts in which VHA can be used in AR spaces. In addition to the infrastructural dimensions, there will be

changes to software: thus far, virtual spaces, such as in games, involve building worlds inside a closed domain. Through AR, creators will be able to project these worlds into and onto the real world, which will lead to a vast expansion of the type of AR content available.

As 5G allows for the transmission and receipt in real time of large volumes and data, VHA will be able to further integrate between AR spaces and the real world. This will require authentication and forms of data integration when pairing VHA with AR devices and the cloud, one of which would be cloud robotics technology. Cloud robotics allows for dynamically integrating edge devices and the cloud. Efforts are already underway with the development of technology in this space, which will enable us to dynamically change the nature of processing performed between edge devices and the cloud.

Enabling AR content to become more widespread and allowing the real world at large to make use of what was previously locked up in virtual spaces will let users, business operators, and creators to work together to create new interfaces that are highly expressive and functional and pair with a wide range of IoT services.

Issues

The above being said, even if the importance of VHA is recognized and 5G infrastructure becomes more mainstream, giving creators and developers more motivation to create content, there are still some issues to overcome.

We have identified three key issues below.

1. Digital Ownership

Under traditional schemes, developers of VHA are unable to provide the ownership of their data.

For example, suppose a creator designs a VHA and uploads it to a marketplace. Since the data is digital, it can be easily copied by bad actors, and they can claim the ownership on another marketplace. Since these are two different marketplaces using two different systems, there is no way for other people to know which person is claiming the proper ownership.

2. Incentive Mechanism

In order for a developer to create a large-scale system like a game or VHA, the creator has to work at a development firm or volunteer with an open source project. Even if seeking to develop a game or VHA for wide penetration, it remains difficult to set incentives tailored to the individual level of contribution and therefore invite skilled creators to take part.

3. Fairness and Transparency of Data

As data becomes more widespread, proper filtering in order to determine which data to provide to which users becomes necessary. This would enhance client experiences, lead to more users, and in turn increase revenue.

However, while centralized platforms offer a fair climate for users and corporations taking part in a platform, once the platform becomes indispensable to the user-base, the operator gains major leverage over them. This gives the operator an incentive to control some of the data for its own end. Furthermore, use of this data is done in a black box, so users do not

even know if their data is being fairly used, or whether the service operator is using it for their own gain.

For example, if the logic behind Google search rankings suddenly changes, a company once at the top of the rankings may fall, affecting revenue, and instead having Google services appear on top. Google is not alone in this regard; other corporations in the service space, such as Facebook and Amazon, also maintain privileged positions and use data in a monopolistic fashion.

Solution

We are employing blockchain to provide an integrated solution to improve data ownership, incentive mechanism, and fairness and transparency of data issues. This solution will create an environment that will foster the development of the next-generation interface for the 5G/AR era.

1. Proof of data ownership on blockchain

Use of the blockchain allows for total reliability of the underlying data and once the data is saved, even the platform operator is unable to manipulate it. This will visualize the ownership proof and allow everyone to understand who owns the data.

2. VHA marketplaces enabled by cryptoeconomics

A Curation Market is a concept espoused by Simon de la Rouviere of ConsenSys. It is an organizational model that allows players on the network to collaborate towards a common goal. This market includes the following functionality.

1. A token that can be minted at any time (continuous) according to a price set by the smart contract.
2. This price gets more expensive as more tokens are in circulation.
3. The amount paid for the token is kept in a communal deposit.
4. At any point in time, a token can be withdrawn (“burned”) from the active supply, and a proportional part of the communal deposit can be taken with.
5. The tokens are used to bond it to curators per sub-topic, who then curate information with their proportional backing.⁴

This system is used when designing incentives for the distributed marketplace used to buy and sell VHA Interface and VHA Brain, discussed later.

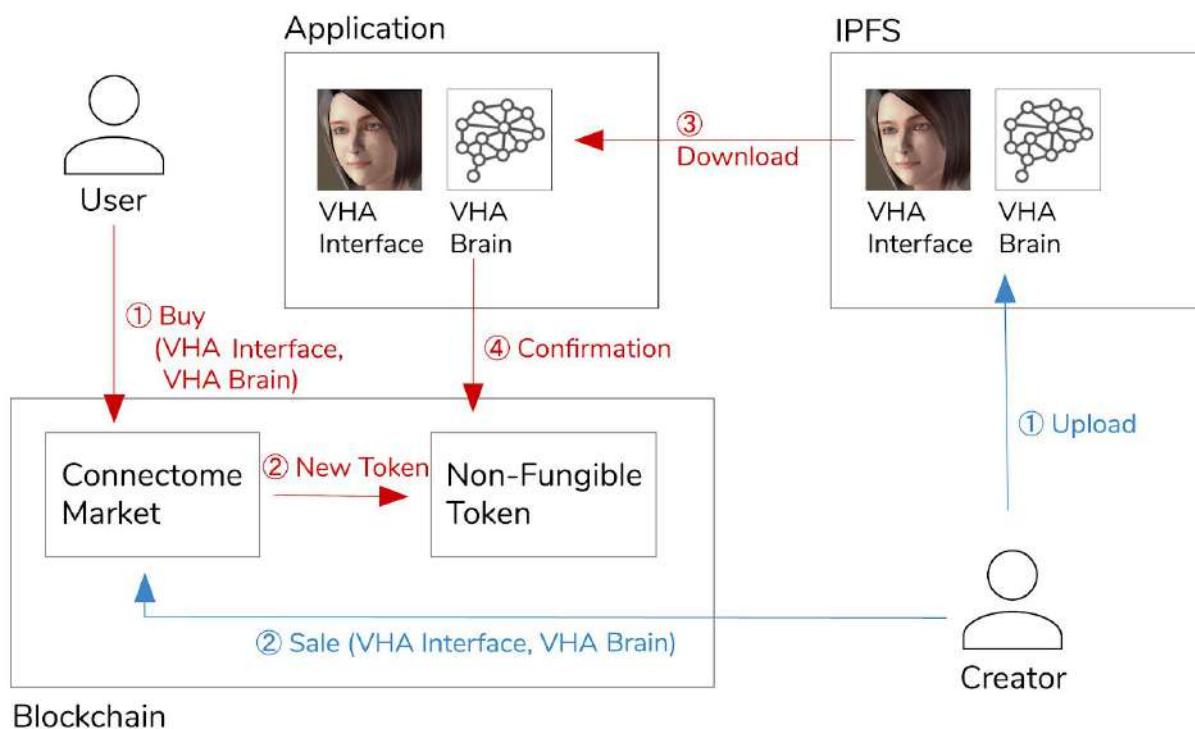
Moreover, a variety of data will be required to train the VHA Brain’s AI model. To do so, we will connect Connectome to Ocean Protocol’s data marketplace and implement Token Curated Registries (TCRs), a registry of listing generated by token holders. We will have a list of data for each use case (e.g. receptionist, car guide, friend), and developers utilize them to create a better AI model.

VHA developers retain the value of VHA models and interfaces in the form of tokens. As the value of models and data increases, more people deposit against the token, and the value of the token increases. This allows for giving incentives at the individual level based on contributions and evaluation of performance, encouraging skilled creators to take part.

Unlike centralized platforms, where data is used in a black box, the design of incentives based on token distribution makes it difficult for specific players to control assets. This in turn allows for ranking VHA, AI models, and data in a fair and transparent way. Specifically, use of a voting functionality to determine to what extent a VHA model or interface is suitable for a specific use case allows for an impartial approach to evaluation that is not controlled by single parties. This allows for filtering content to show the most highly-ranked items.

Product

Connectome consists of four components: the VHA development platform, a distributed marketplace, a virtual space, and a platform used to integrate the virtual space with reality.



1. Connectome SDK, the VHA development platform

First, SDK will be released to provide the development environment of “VHA Interface” and “VHA Brain”. By using this SDK, interface creators and AI developers can easily develop components of VHA.

VHA Interface

It will be the interface that will directly communicate with users. By visualizing human-like appearance, facial expressions and motion, the interface will allow the model to have a trustful relationship with humans.

VHA Brain

It consists of two types of AI models; “Situation Recognition AI” understand the situation of a space by recognizing object, an individual's face and speech, and “Human-like Decision

Making AI” make appropriate judgment and decision making in real time based on the results recognized by the situation recognition AIs.

Situation Recognition AI

- Video Recognition
- Voice Recognition
- Space Recognition with AR
- Identification of Individuals

Human-like Decision Making AI

- Communication with human
- Real-time response
- Emotional expressions such as joy, anger, sadness and pleasure
- Continuous and Episodic memory

The situational understanding AI uses machine learning to perform real-time detection of multiple inputs like video, audio, and AR. The human-like decision-making AI uses these inputs to make decisions and judgments.

In order to develop the above, VHA is developed on Connectome. The Connectome API/SDK are then released, and creators and developers employ this infrastructure to develop VHA.

2. Connectome Market, the distributed VHA marketplace

Next, we will develop a blockchain-based distributed marketplace in which the VHA brains and interfaces described above can be purchased.

As these are uploaded onto the Connectome Market, unique tokens are issued against each model and interface. The value of tokens changes based on the Curation Market, and the value in turn dictates the ranking given to a model or interface. This allows developers to obtain proper ratings not controlled by a specific playerbase.

Furthermore, Non-Fungible Tokens are issued; these contain ownership information like the creator, ownership history, and sale price. This allows for explicitly demonstrating the ownership of an asset.

When a user purchases a VHA brain or interface, they are issued a Non-Fungible Token that contains data on usage rights. The user with this token can then make use of the corresponding VHA data.

In the long term, the Connectome Market would be linked to other distributed marketplaces and functionality implemented to train AI models in a distributed fashion.

3. Connectome Universe, the virtual space for VHA

VHA created on the marketplace will be used in the Connectome Universe, the virtual space in which one can communicate with other users' VHA.

Through Connectome Universe, we provide a space in which users can communicate and integrate with various services provided by companies around the world. This enables VHA in the virtual space to engage in more active communication.

4. Connectome Gateway, the platform integrated with the real world

Through interaction with VHA in a range of contexts, information of each user is gathered and used to create spaces on the linked devices and services and optimized for them.

Moreover, when 5G becomes widespread, the system will allow for VHA to freely move between the virtual and the real world. This will create a seamless space in which the VHA owned by automobile manufacturers, telecommunications carriers, real estate agents, and users can freely go anywhere.

Authentication (cloud robotics)

- Robots and drones authenticated on IoT

Service provider CMS

- Provision of service provider's services
- CMS customized for each service provider

Allows for using CMS customized and published by developers, and by customizing for specific use in-house.

Integrated with smart contracts

- Search and matching of service providers and services (products)

An off-chain search index is built against service provider and product data stored on-chain, allowing for bidirectional communication between smart contracts and the search engine.

- Service provider ratings and sharing of histories

Instead of retaining ratings and history on-chain, they are aggregated off-chain through the use of smart contracts, allowing for outputting data per service provider. Storing ratings and history in this manner off-chain would presume large consumption of gas, given the size of the data. To avoid this issue, the system presumes off-chain storage. Given that on-chain evaluation presents problems, we will consider the use of side-chains like Plasma, which do not consume gas.

Steps

1. Creation

Developer / creator creates a component of VHA in the following procedures.

- Select the basics
 - Human Model
 - Gender
 - Facial Expressions
 - Motion

- Basic Personality
- Select the role
 - Receptionist
 - Car Guide
 - Game/Entertainment
- Select the device
 - PC
 - Smartphone
 - Smart Glass

2. Customization

User can customize the following elements.

- VHA Interface
 - Human Model
 - Facial Expressions
 - Action(Motion, Gesture)
- VHA Brain
 - Situation Recognition AI
 - Visual
 - Auditory
 - Human-like decision making AI
 - Edit Personality
 - Edit Role Skill
- IoT Input/Output
 - Connect Input Devices
 - ex. Camera, Sensor etc.
 - Connect Output Devices
 - ex. Lights, Doors, Call APIs etc.

3. Sell and Buy on Marketplace

The following elements can sell, buy, shared in the marketplace.

- VHA Package(Interface and Brain)
 - Related with Connectome SDK
- VHA Interface
 - Human Model
 - Facial Expressions
 - Action(Motion, Gesture)
- VHA Brain
 - Situation Recognition AI
 - Additional AI(ex. Pose, Facial recognition)
 - Human-like Decision Making AI

- Role Skill
 - Personality

Business Model

User Stories

1. Receptionist

After purchasing a VHA and define the role as “receptionist” in the steps mentioned above, user setups a camera in a room, gather the information, and send it as to IoT devices. By doing this, the VHA recognizes the state of the room, communicate with the users, and make a suggestion.

Also, the personality and skills of VHA can be customized with editing tools.

When user wants to change the appearance and motion of VHA, they can buy a VHA interface with Connectome market. Even if you want to sell or share Brain or appearance you created, you register it in Connectome market.

Example 1)

In order to improve the accuracy of VHA image/video recognition, the user does the following.

- Buy an image recognition Brain (AI model) at Connectome Market

Example 2)

If user wants to increase the elements that VHA recognizes, the user does the following:

- Buy a pose recognition Brain (AI model) at Connectome Market

Example 3)

In the reception role, if you want to increase the VHA's corresponding skills, the user does the following:

- Customize skills with the edit tool
- Buy a skill to improve reception role at Connectome Market

2. Car Guide

VHA will plays as a guide to drivers and directs them to destination.

3. Game/Entertainment

VHA plays as a friend for kids, single or elderly people who need psychological supports or for entertainment purposes.

Comparison AI Speakers

	Centralized	Distributed
Audio	AI Speaker	
Audio + video		VHA

There are three key differences when we compare VHA with AI speakers.

Comparison “Audio” to “Audio + video”

First of all, not only auditory but also visual data will be provided. This allows users to feel familiarity with the interface and engage in better and more active communication. The interface in turn gains more data from the user, allowing it to analyze the user’s needs and respond accordingly.

Human-likeness

Although AI speaker providers such as Amazon, Google, and LINE do a lot of experiments to give the interface human-like impression, it is still halfway way. We seek to develop the interface to take a different approach from them and make communication more natural with humans. While they adopt AI-based automation as a core technology and add human-like technology on top of them, we are advancing automation by AI based on human-like communication technology. This allows for obtaining, through communication with users, more information that was previously difficult, and using it accordingly.

		Amazon, Google, LINE	VHA
Approaches		Based on functionality as an AI tool, with human-like expressive power on top of that	Based on Human-like expressive power, with functionality as an AI tool on top of that
Architecture	Additional technology	Human-like expressions and phrases	<ul style="list-style-type: none"> Usefulness as an AI tool Automation
	Core technology	<ul style="list-style-type: none"> Usefulness as an AI tool Automation 	Human-likeness <ul style="list-style-type: none"> Has human-like emotions Maintains continuous memory like humans Can express one’s condition through facial expressions and gestures
Input data		Data associated with commands	<ul style="list-style-type: none"> Communication data integrated in the human community

“Centralized” and “distributed”

As described above, the largest issue with marketplaces with a specific operator is that the data and rules of that marketplace can be changed at any time by the operator, unseen by its users. Since blockchain-based marketplaces cannot even be modified by the operator of the marketplace, it improves fairness and transparency of data, true ownership of digital assets by users, and incentive design.

These three differences will affect the quality and quantity of creators participating in development for VHA because of the room for ingenuity, rights and incentives.

Research institutes

Various research universities have explored the development of solutions like VHA. However, these have been for research purposes, and they do not cater to actual uses and needs of people in society. By contrast, Connectome allows for designing incentives around developers and provides an SDK, which supports the production of high-quality, diverse works at scale. This will let people develop VHA to meet new and unexpected needs and uses.

Game companies

While some game companies are developing characters in their games that resemble VHA, the VHA are only for use within the game itself. Given that developing VHA is not the goal as such, the quality of the game content is emphasized over the VHA itself.

Connectome is designed towards development of VHA for use in the real world. This will lead to the creation of a wide range of diverse VHA for different use cases.

Game blockchain

The emergence of Non-Fungible Tokens has allowed for services for managing characters like Crypto Kitties on the blockchain, and new projects like Decentraland, which merges games with blockchain technology. These and other projects are rapidly emerging.

The biggest difference between Connectome and these services is that, while the above are designed for playing games in virtual spaces, Connectome is designed for use in the real world. In other words, Connectome allows for VHA to meld with the real world through AR devices, thereby improving our lives.

Technology

We intend to use our experience and expertise in AI, games, cloud robotics, search, and smart contracts when developing the product above. The technical aspects of the Connectome platform are as follows.

1. Situational recognition AI

Connectome’s VHA presumes an AI model (see product 1) for not only object detection in an AR space, but facial and speech recognition of specific users. In the initial phase, we will use open data (coco dataset, VGGFace2) in order to achieve greater fidelity and reliability of learning data. This would allow for a safe situational recognition AI. We may also use AI

resembling the Ocean protocol, or obtained from specific marketplaces and tailored to certain machine learning needs.

2. Human-like decision making AI

The Connectome platform employs technology 1 above to provide an SDK used to create Human-like decision making AI that can react to users. This allows game creators to design algorithms around situational understanding AI and design characters, among other uses. AI reciprocally communicate in real time between the node and client, with VHA reacting in specific ways based on the input data.

3. Sale of algorithms

Furthermore, by allowing algorithms individuals create to be sold on a distributed marketplace (see product 2), the Connectome Market aims to vitalize the entirety of the market. Each VHA employs the strengths of Non-Fungible Tokens to issue tokens on a per-character basis. Use of algorithms and VHA can be restricted to specific users (those granted permission).

The aforementioned smart contract-based Curation Market and Token Curated Registry (TCR) can be used to structure and provide proper incentives to VHA token holders selling these algorithms, users, and developers. In this way, it is vastly different from development structures used in the existing game industry.

4. Distributed AI learning

The ultimate goal of the situational recognition AI (1 above) that Connectome aims to offer is providing users with an AI model based on safe and reliable blockchain technology. This would imply a break from the black box AI provided by large enterprise operators. To that end, blockchain data (and protocols using said data) is treated as a learning data set; these data sets allow for performing decentralized learning.

While there are some technologies being developed that employ distributed learning approaches, there are none that are decentralized. In the majority of cases, the distributed nodes are managed by specific individuals or corporations. There are some methodologies that pursue AI learning through blockchain-based distributed computation, but there is no technique in place for properly evaluating and verifying that the learning was performed correctly. One solution to this that is being tried is using specific Intel SGX-based nodes to impose hardware restrictions, or voting-based systems to measure learning based on the collections of votes. These systems, however, depend on governance and are not, in the strict sense, pure distributed forms of AI learning.

Seeking to break this impasse, Connectome is aiming to offer a distributed and decentralized AI methodology, and we are building a specialist team and working with partners to pursue R&D.

5. Connectome Universe

The user-side of the VHA system will employ a range of proprietary (or obtained in partnership) technologies (see product 3). The first is a wallet functionality that allows the user to store and manage tokens used to purchase VHA on the marketplace. This wallet would not only support Connectome, but a range of ERC-compliant tokens. It would employ a familiar UX vocabulary that would make it easy for users to use on a daily basis. The second is a CMS for service providers. This CMS allows individuals and corporations

providing various services to easily deploy the CMS and provide those services, then make use of IPFS, a distributed file system, for product metadata. It is designed store data of large sizes. The third is technology used to automatically search deployed smart contracts and provide the optimal services to users through VH. The ultimate goal of the Connectome VH is providing an AI that can automatically determine a particular context or situation based on a user's data and history. There are two key challenges here -- the first is processing speed of the situational recognition AI, and the second is maintaining security of user histories -- in other words, privacy measures for user data. Processing speed today involves a trade-off with the communication speed of the client device. As mentioned above, once 5G becomes a more widespread standard, transfer volume and speed will increase markedly, making these initiatives more possible.

Team

Core members



Yasunori Motani | Executive Director at Connectome Pte. Ltd

Based in Singapore, Yasunori Motani is cofounder and executive director at Connectome, where he leads marketing and business development globally. Previously, he was the blockchain project lead at KDDI, Japan's second largest telecommunication service provider, where he spearheaded a blockchain project in KDDI. Prior to KDDI, Yasunori held various key business roles at LINE, a global messaging platform headquartered in Japan. He was also instrumental in the launch of LINE Pay, a smartphone digital wallet service on the LINE messaging app. A long-time entrepreneur, Yasunori founded his first startup in 2009, after starting his career in business management at Japanese global conglomerate Hitachi. He is also cofounder of Blockchain EXE, the largest blockchain technology community in Japan.



Atsushi Ishii CEO at Cougar Inc.

Ishii developed various services at IBM, as well as multiple large-scale search engines at Rakuten and Infoseek. He founded Cougar in 2006 and led international teams in Japan, US, and South Korea developing multiple top-selling online games. He has provided technical support to one of the top teams taking part in the Amazon Robotics Challenge, built an AI learning simulator used by Honda, and led the development of Cloud Robotics for a Japanese government-backed AI research project. He is currently leading the development of Connectome, the next-generation human-technology interface using AI x Robotics x IoT x Blockchain.



Hikaru Takahashi CTO at Cougar Inc.

Takahashi is an expert in the development of systems for large-scale user groups, handling millions of daily accesses. He has developed backend systems for one of Japan's largest eCommerce companies, Rakuten, and online games at Square Enix. At Connectome, his main focus is the ongoing development of combining AI and blockchain to produce the human-technology interface of the future.



Kazuaki Ishiguro Chief Blockchain Architect at Couger Inc.

Kazuaki studied in Los Angeles where his initial programming experience came from a career as a DJ. He later went back to Japan and worked as a software developer at a CTI-startup. He is self-taught in the development of blockchain solutions, a contributor to Vyper & BigchainDB, and Regional Head of the Enterprise Ethereum Alliance. Kazuaki is Connectome's lead engineer of blockchain development also has lectured at Stanford University for importance of Virtual Human Agent and its security system using blockchain.

Advisors



Dimitri De Jonghe Ocean Protocol co-founder and head of R&D

Promotion of distributed data-exchange for AI. BigChainDB's Application Director and co-chair of the Interledger community. PhD in Robust Modeling of Analog Mixed-Signal Circuits and Masters in Engineering.



Yuji Akaba Managing Director of Breakthrough Partners

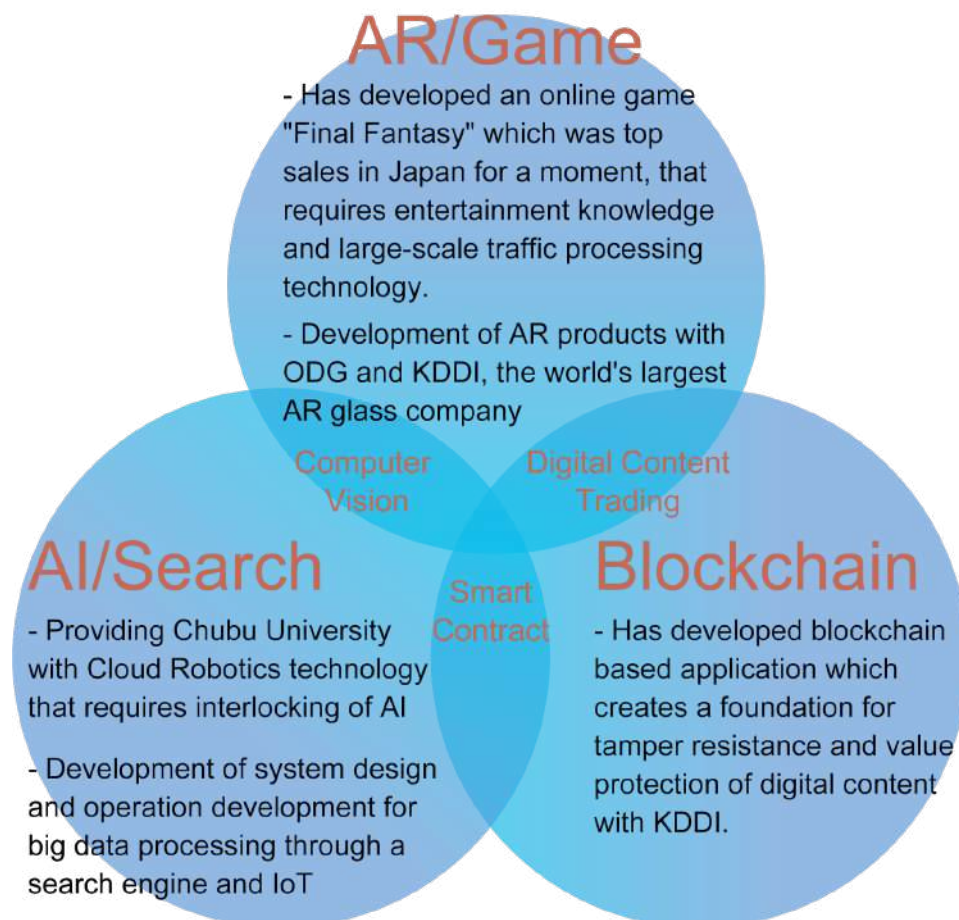
Undergraduate Engineering degree from Tokyo University. Worked in design and development of dump trucks at Komatsu. Later earned a Master's degree in Mechanical Engineering from Stanford and started working at McKinsey. Established their Seoul office. After 14 years at McKinsey, co-founded Breakthrough Partners. Now works in venture management support, management reform of medium/large-scale enterprises, executives trainer, and new business creation. Author of "Zero-second thinking."



Koji Morihiro Managing Director of Breakthrough Partners

Materials Engineering degree from Cornell. Joined Fujitsu and earned Best Sales Award while working in the US corporate division. Involved in corporate acquisition, overseas memory development base, and establishment of the world's largest semiconductor factory. Received President's Award in US Strategic Alliance. Joined as partner in Silicon Valley's venture capital firm, Techfarm. Engaged in the founding, management support, and investment of globally competitive high-tech ventures.

Background overview



Roadmap

2018 Q4(10-12)

- Integration of object recognition model
- GeneFlow β : Ensure the Reliability data for AI

2019 Q1(1-3)

- 3D humanoid model Mark2
- Making a model of emotion recognition
- Making GUI tool for scenario data
- Publishing “Marketplace” on Github
- Co-working space’s POC

2019 Q2(4-6)

- 3D generic model zeta
- POC’s expansion

2019 Q3(7-9)

- Partly combination of AI models
- Launch a private network “Marketplace”
- Allow using JavaScript for scenario

2019 Q4(10-12)

- 3D model switching function
- Partial update of Rachel through combination and expanding AI models
- “Marketplace” testnet operation
- Global community cooperation through using a version SDK
- Wallet function

2020 Q1(1-3)

- Tools for character creation
- “Marketplace” mainnet operations
- Public presentation on Ethereum

2020 Q2(4-6)

- Opening marketplace
- Integration with external API service
- Increasing expansion of development

Description of the company

Connectome Pte. Ltd is a technology company revolutionizing how humans interact with Artificial Intelligence (AI). Based in Singapore, Connectome Pte. Ltd is building an integrated autonomous technology platform powered by AI and blockchain.

Token

Type

CNTM Tokens will apply at blockchain-based marketplaces where VHA can trade:
(1) Discount on VHA: We give a discount from the VHA price depending on a number of tokens that the user possess at the time of purchase; and (2) Meta-transactions: Users would not have to pay for the gas which occurs when making a transaction of commodity registration and user registration by paying CNTM Token for it.

Distribution

Total circulation of CNTM Tokens will be 1,000,000,000 (1billion) . 75% of the tokens will be used for the company's activities and rewards to the team who have contributed to Connectome's development and marketing activities.

The IEO sale will take place in advance of the public sale and allocates tokens to individuals and companies who consent to invest in the project.

1. Sales: 25%

IEO(Initial circulation) : 10%
Private Sales(Locked for 6 months with price at 0.02 USD) : 15%

IEO

Target: 10% of total tokens with IEO price @0.015 USD, which gives the project valuation at 1.5 million USD

-IEO 1st Wave : 4.0% - 40,000,000 CNTM (=\$600,000)
-IEO 2nd Wave : TBC

2. Company: 75%

-Community (BD, Marketing) : 25%
-Foundation : 25%(1 year Lock)
-Team : 20%(1 year Lock)
-Advisors & Compliance : 5%

Use of Proceeds

The Purpose of Finance accounts for Major percentage of personnel and promotion. Among them, the portion of Development is large because of large acquisition of AI developers for becoming a leading AI.

Strengthen the promotion to establish a solid position in “First VHA Company”

Personnel cost(Dev)	33%
Personnel cost(Marketing/Operation etc.)	18%
Promotion	16%
Market fund	23%
Other	10%

Business Risk Factors

Risk Factors

1. Market downturn
2. Breach in Cybersecurity
3. Sudden Regulatory Change

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Sources

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