

OMNIS LABS COMPANY

DEEP BLOCK AI EDUCATION

OVERVIEW

1. Problem

Recently, the demand for AI is increasing across all industries, but AI experts are scarce. And the number of AI experts in non-IT domain is even less. AI is more valuable when it is applied in non-IT fields, but there are few experts who know AI outside of IT.

In addition, existing AI education is not suitable for non-computer science majors who need to apply AI technology to various industries. Existing AI education has been developed for computer science majors, and students need to have a lot of knowledge in computer science and mathematics to understand this education.

2. Solution

We solve these problems by providing a point and click AI model development tool and AI education contents designed for non-computer science majors. We developed an AI platform, [Deep Block](#), that allows users to develop AI models without coding, and we are using this for AI education. We also developed AI education contents WITHOUT or LESS mathematics and codes so that non-AI professionals can easily understand how to use AI. With Deep Block and our AI education contents, trainees can easily understand the AI workflow in visualized way. And, if they want, they can also learn how to develop AI models in code by converting each component of Deep Block into code.

3. Competitive Advantages & Benefit

Competitive Advantages

- Designed for non-IT professionals
Most AI education service providers imitate AI courses of Coursera and Stanford University. However, these courses are designed for graduate students majoring in computer science, and it is very difficult for non-computer science majors.
We solved this problem by developing education courses without or less mathematics and codes. Trainees can understand the AI workflow by using Deep Block AI suite to build AI models without coding.
- Provide both practice environment and educational service
Most AI education service providers do not provide practice environment for education. However, Omnis Labs Company offers education materials and Deep Block, a GUI-based AI platform.
It visualizes entire workflow of AI, with annotation tools necessary for building a training data for AI.
- Web browser-based
Our education website and AI platform can be accessed from anywhere in the world via the Internet.
Students can practice and create AI through our platform without purchasing expensive deep learning hardware, and we provide everything necessary for AI model development inside our platform.
- The best team for AI education
There are many AI education service providers on the market. However, most of them do not have experience developing commercial AI solution.
However, Omnis Labs has the capability to provide optimal AI education program because the team has experience in both ICT education and AI engineering with commercial AI solution development experience.

With this experience, Omnis Labs can provide trainees with the world best AI education and insights of AI technology.

- Ready for market

We already developed the practice environment for education, filed trademark in US, developed educational contents and curriculum, and built education websites.

If the customer wants, it is possible to provide the course within one month after signing a contract.

Benefit

- Easy and intuitive

Our AI education is easy enough for primary school students to understand. People who had trouble learning AI skills can understand our education. Trainees can create their own AI models and understand the AI model development process with point and click action.

- Induce interest of students in AI technology

Learners can use our AI suite to develop useful AI models that work for real-world datasets with just mouse actions. This can help them become interested and become more enthusiastic about learning AI skills.

In the 21st century, AI literacy is essential for everyone. Our education and practice environment can give them great motivation for learning AI.

- A good starting point of learning AI

Many beginners and non-AI experts don't know how to start studying AI. However, our education program can be an optimal entry point for them to start studying AI.

- Provide AI tools useful enough for real world problems

Deep Block is an AI analytics. Deep Block is not just an educational tool or a toy. It is an AI analytics that can be used to solve problems in the real world. Therefore, for trainees who want to use an AI tool rather than study coding, Deep Block and the no-code AI education can be the best option to save their learning time.

- Acquisition of AI skills for getting a job

Recently, AI has become popular in many industries. However, there are few AI experts, and the demand is growing very much. However, due to the coronavirus epidemic, many non-IT majors are having difficulty finding a job, and only positions in the IT field are increasing. Therefore, educational institutions should solve the unemployment problem by supporting AI education for non-computer science majors. And we can provide AI skill training tailored to these non-IT majors.

4. Pre-requisites

In the case of no code AI education, students can learn without any knowledge of programming or AI. Even a coding-based AI courses are easy enough for students with basic Python programming skills.

The education will be delivered online through lectures and a browser-based AI suite. Thus, students do not need to prepare expensive GPU devices or high-end computers for learning.

5. Delivery Method

The lectures will be delivered [completely online](#) via Thinkific, a third-party learning management system, and they can be accessed at deepblock.thinkific.com

The practice will be available on Deep Block AI platform at <https://app.deepblock.net>

We can also discuss optional arrangements to host content and tools on the platforms and infrastructure of the customer's choosing.

It is possible to provide 3 credit courses within 2 months after signing the contract. If faster delivery is required, we can upload 2 lectures per week during the semester, so we can provide all the lectures within the semester.

6. Scope of Service

Video lectures (no lecturer required)

Lecture slides

Forum for QNA (no TA required)

Certificate of completion

Deep Block AI suite with 50 GPU compute hours for practice and learning

Assessment (If necessary)

Quiz (If necessary)

7. Courses

We provide both no-code AI education and low-code AI education. We can also offer customized AI courses according to customer needs. Currently, the courses that can be quickly provided are as follows.

- No-Code Version

- Introduction to AI

- Introduction to computer vision

- AI technology workshop for various industries

- Low-Code Version

- Basic Python programming for AI

- Introduction to AI

- Introduction to deep learning

- Introduction to computer vision

- Introduction to object detection

- Introduction to image segmentation

- Deployment and packaging of AI models

8. Legal

We have completed a trademark application in the US, and we already registered as a company in South Korea.

We also have two patents, so there is no problem with business in overseas markets such as the United States.

9. About Omnis Labs Company

Omnis Labs is the maker of Deep Block.

Omnis Labs is committed to providing the best AI technology training courses based on its rich AI solution development experience. Omnis Labs' AI engineers provide customers with essential practical knowledge and experience based on their experience in developing commercial AI solutions.

In addition, the CEO of Omnis Labs has work experience in ICT education field as an IT education course book writer.

Omnis Labs is the best team with experience in both IT education and AI engineering, all of which are AI experts majoring in computer science.

Omnis Labs is an alumni startup from the Department of Computer Science and Engineering at Seoul National University, the best university in Asia. We have the best expertise required for AI technology education, and we do our best to democratize AI.

COURSE EXAMPLE – INTRODUCTION TO COMPUTER VISION (NO-CODE)

In this course, students will learn the fundamental concepts and workflows involved in deep learning for computer vision. The course will consist of conceptual lectures introducing the basic principles of AI, and each lecture will have a practical component where students will apply the principles using a point-and-click, no-code environment in a web browser.

The course is organized as a series of 20 lectures throughout which the students will develop hands-on experience in finding and importing datasets; annotating their data sets as training data for deep learning; training and evaluating AI models that are suitable for their specific analysis; deploying the models to provide real-world analytics for new images beyond those present in the training data.

The credits of this curriculum can be calculated as 3 credits when used as a university liberal arts course. It is also possible to reduce or increase the size of the course and credit according to the customer's request.

Each lecture will consist of 40 minutes of a conceptual introduction to a particular step in an image analysis workflow, followed by a 10-minute demonstration of how to complete that step using Deep Block.

Lecture	Title
Lecture 1:	Introduction to AI
Lecture 2:	Introduction to Deep Learning
Lecture 3:	Introduction to Computer Vision
Lecture 4:	Introduction to Object Detection
Lecture 5:	Object Detection - Data Preparation and Data Preprocessing
Lecture 6:	Object Detection Model Training
Lecture 7:	Evaluating the Object Detection AI Models
Lecture 8:	Inference of Object Detection AI Models
Lecture 9:	Deployment of Object Detection AI Models
Lecture 10:	Midterm Project (creating custom object detection AI using Deep Block)
Lecture 11:	Image Segmentation - Data Preparation and Data Preprocessing
Lecture 12:	Image Segmentation - Model Training and Validation
Lecture 13:	Deployment of Image Segmentation AI Models
Lecture 14:	Object Detection and Image Segmentation
Lecture 15:	Model Optimization
Lecture 16:	Face and Computer Vision
Lecture 17:	Other Computer Vision Topics
Lecture 18:	Limitation and Use Cases of Deep Learning
Lecture 19:	Final Project (creating custom image segmentation AI using Deep Block)
Lecture 20:	Final Project (creating custom image segmentation AI using Deep Block)

AI MODELS CREATED BY TRAINEES

We are already providing offline AI education program in Korea. These are the AI models created by non-computer science major trainees without much knowledge of coding and AI.

Thumbnail	Project Name	Description
	White Blood Cell Detection	<p>A pathologist was able to implement an AI model that detects white blood cells through our course.</p> <p>He wants to continue to take our education courses and Deep Block AI platform to build AI models for various pathology works.</p>
	Mask Detection	<p>One of our students build a mask detection AI model using Deep Block, taking into account the mask wear restrictions of governments around the world.</p>
	Traffic Sign Detection	<p>A student with mechanical engineering major participated in our education course to study AI, and successfully built an AI model that detects traffic signs. And he could get a job at an autonomous driving startup that he wanted to join.</p> <p>The company's executives loved the student's knowledge of AI and mechanical engineering.</p>
	Boreal Digging Frog Detection	<p>In recent years, protecting nature and sustainability is considered as the most important thing in the global economy.</p> <p>One of our students developed an AI model that detects the endangered species in Korea, boreal digging frog. She learned basic AI skills through our program, and she eventually founded a startup that uses AI to protect wild animals.</p>
	Car Detection from Aerial Images	<p>Through Deep Block and our education, a government official of Seoul city was able to create an AI model that detects cars for traffic condition monitoring WITHOUT CODING.</p> <p>In addition, Deep Block's AI skill training provides very useful tools and insights for students and practitioners in the field of remote sensing.</p>

USEFULNESS

Our education and Deep Block AI platform is useful for many industries.

- **GIS**
Deep Block was initially developed for the analysis of aerial photographs, satellite photographs, and drone photographs used in GIS. Professionals in the GIS field mainly use these image data to do their work, and our AI education and platform can be very useful to students in this domain. Given that they lack computer science knowledge and that these tools are so much needed for them, Deep Block can be the best AI education curriculum for remote sensing related majors.
- **Mechanical Engineering**
Mechanical engineering is closely related to AI. In the autonomous driving industry and manufacturing industry, AI is widely used, and through the Deep Block, mechanical engineers or students can learn basic AI skills necessary for their work.
Through our AI skill training, they can learn computer vision AI used for defect detection in manufacturing industry, or AI for autonomous vehicles and robotics.
- **Earth Science**
Earth scientists also uses satellite photography like GIS professionals. These data are very large in volume and high in resolution, so it is very difficult for humans to analyze, so they are actively trying to apply AI.
But their major is usually physics or earth science, so most of them lack AI and computer science knowledge. For this reason, Deep Block can be the best tool and education for them.
- **Medicine**
The most important thing in medical service is diagnosis. The most important things in diagnosis are radiology and pathology, and the task of image analysis plays the most important role in these fields.
Recently, many MDs are attempting to apply AI to the fields of radiology and pathology. However, since they are also non-computer science majors, they have difficulties in learning and using AI.
Deep Block's AI tools and education courses can be of great help to these healthcare practitioners, and we want to help them learn and use AI to innovate medical industry.
- **Biology**
In the field of natural sciences, including life science, the analysis of micrographs plays a very important role for research and industries. However, they are also non-computer science majors with only knowledge of chemistry and life sciences, so they are having difficulty in learning and using AI technology.
But through our AI platform and education programs, they can learn and utilize AI technology with little effort.

CUSTOMERS

We provided our AI skill training program to various government organizations and universities in Korea.

- **Korea SMEs and Startup Agency (KOSMES)**
It is the Korean government organization created to support SMEs in Korea. We are providing AI technology education program for SME founders in Korea funded by KOSMES.
- **Busan IT industry Promotion Agency**
We are providing AI education program to the Busan local government, the second largest city in Korea.
Busan IT industry Promotion Agency is an affiliate of Busan city and they are providing AI technology education program to local residents using Deep Block.
- **Hanyang University**
We have provided AI education program to Hanyang University, a renowned university in Korea.
The client is a university lab, and we developed AI-powered ECG data analysis application for them, and their researchers also learned the basics of AI from us through our AI education program.