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Pre-study of AI-based Modelling and Research for Exact Prediction of Korean Economic Trend

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Abstract: This paper focuses on how to apply to the prediction of Korean economic trend by AI based econometrics. The traditionally, the economic trend analysis has been using the mathematic-based the prediction or the directions of changes in the economy using such as linear regression, ARIMA (Auto-Regressive-Integrated Moving Average) or VAR (Vector Auto-Regression) However, there are always many non-linearities in economic models and the issues during research process because of the process of linearization. On the other hand, the function of AI such as LLM (ChatGPT: Chat Generative Pretrained Transformer AI) technology neural network, and its combined learning system has a powerful learning (supervised learning, unsupervised learning, and reinforcement learning to train language). The generative AI model-based LLM (Large Language Model), TIM (Text-to-Image Model), and ITM (Image-to-Text Model) are rapidly increasing their functions and it has so many possibility for applying in everywhere because a new generation of user-friendly tool (Generative AI: Chat GPT) is useful for texts, images, and videos. It is very important to exactly understand and decide on how and what we have to do for the Korean economic analysis process for business, policy, and job patterns.

The first aim of his paper is to provide study strategies and simulation on how AI-based generative model and related technologies apply to economic analysis processing and what we have to prepare and study Korean econometrics.

Keywords: AI, LLM, Econometric analysis, Econometrics Model.

I. INTRODUCTION

AI (Artificial Intelligence) reaches all areas even research method and education as well as technologies such as manufacturing, beauty, smart farm [20], fashion and manufacturing design, medical and public health policy, and so on. As current developing speed of AI and LLM increase, applications impact on many sciences and research patterns [4] increase and AI based-research and thinking styles are increasing.

The application of current AI is important to get an information and perform many researches as well as even industry and commercial sites [2, 3]. As current AI application and job replacement [34-36] are created and workspace are changing, young generations should prepare and modify their traditional basic ideas. Especially, the jobs of the traditional low-cost repeat jobs and industries can be significant displacement by AI and AI robotics.

The education area cannot avoid this impact. It is more serious because of non-professional in students. Commercial AI support study and analysis about students' personal characteristic and motivation through chatbots or other AI tools. AI also help design idea and creativity of students as well as experts.

Regardless human agreed or not, AI and its related technology is changing economic driving forces and job pattern [5, 26].

The current research application of the ChatGPT on how to use it, how to have an application it, where to use it, after released Chat GPT in March 2023 (test version, Dec. 2022) is interested more and more as well as physical areas such as industry, advice, writer, and medical analysis. Some reports (Brad D. Lund, 2023) mention the value of ChatGPT that its impact is over the impact of the steam engine of the 1700s of 2nd industrial revolution.

Of course, some experts and NGO have a negative idea about functions of ChatGPT. However, we cannot deny its creativity advise function such as writing, drawing, analysis, music, and so on. It means Al jobs and productivity in research areas will be affected.

As artificial intelligence (AI) has an interdisciplinary function for learning facts, analyzing data, and making decisions, AI is widely used in various domains, such industries, engineering design, and economic research, and can provide modern analysis tool to support research activity. With advanced learning function and data analysis algorithms, AI provides more delicate functions that analyze vast amounts of data and identify patterns that were previously difficult to

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analyze. With these reasons, traditional economic modeling, economic analysis and predictions such as linear regression or time series models should be considered again than a key role.

The traditional methods is effective and useful in many applications. However, these tools have limitations because those require theoretical assumptions to make equation and they have the difficulty in analyzing complex and vast of nonlinear data sets. However, the AI can provide new function that can complement or replace traditional approaches, introducing flexibility and greater precision to the modeling of complex economic situation and parameters.

The aim of this paper is to provide how artificial intelligence can have a possibility of practical applications and development prospects for economic modeling and economic research instead of traditional methods. The key benefits and challenges of AI implementation in this field should be introduced. Of course, this paper has a limitation because of full research through simulation and modeling for analysis and forecasting.

Even though, application of artificial intelligence in economic analysis and forecasting should be prepared for delicate and effective research such as forecasting of GDP, trend analysis of financial markets, prediction of commodity and stock market, efficiency of government budget.

There are many advantages when we use AI for economic analysis. The key advantage can improve forecast accuracy because AI use vast data set to analyze and learn these data, and reduce model construction time, and real-time analysis.

Of course, there will be challenges and limitations in the interpretability of models and analyzing dependence on data quality and implementation. However, the future of AI in economic modeling, forecasts should be presented because the use of AI in macroeconomic policy and its role in many areas.

The key purpose of this paper offers findings and highlighting the importance of interdisciplinarity in economic research by AI better than traditional methods contemporary economic research.

II. REVIEW OF THE PREVIOUS RESEARCH

The traditional analysis of economic analysis has been using the mathematic based-the prediction or the directions of changes in the economy. Generally, they use models such as linear regression, ARIMA (Auto-Regressive-Integrated Moving Average) or VAR (Vector Auto-Regression) set the standard framework for econometric modeling. However, there are always many non-linearities in economic models but researcher assume as linearity. It means there will be many errors in modeling and research results. The AI can provide complementation of traditional approaches using more flexible and non-linear data set. In this section, review the traditional analysis to understand AI introduction.

A. Linear Regression for Economic Analysis

The expression way of a linear regression model describes model by using the relationship between a dependent variable, y, and one or more independent variables, X. Here, the dependent variable is also called the response variable. Independent variables are also called explanatory or predictor variables. Continuous predictor variables are also called covariates, and categorical predictor variables are also called factors. The matrix X of observations on predictor variables is usually called the design matrix.

A multiple linear regression model is

$$y_i=\beta_0+\beta_1 X_{i1}+\beta_2 X_{i2}+\cdots+\beta_p X_{ip}+E_i, \quad i=1,\cdots,n,$$

where

- n is the number of observations.
- y_i is the ith response (output).
- β_k is the kth coefficient, where β_0 is the constant term in the model. Sometimes, design matrices might include information about the constant term.
- X_{ij} is the ith observation on the jth predictor variable, j = 1, ..., p.
- E_i is the ith noise term, that is, random error.

If a model includes only one predictor variable (p = 1), then the model is called a simple linear regression model.

In general, a linear regression model can be a model of the form

$$y_i=\beta_0+\sum_{k=1}^{n}\beta_k f_k(X_{i1}, X_{i2}, \cdots, X_{iz})+E_i, \quad i=1,\cdots,n,$$

Usually, it is difficult to interpret the coefficients similarly, since it is not possible to hold X_1 constant when X_1^2 changes or vice versa because of complex equations.

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B. ARIMA (Auto-regressive Integrated Moving Average)

This model is used for forecasting time series data. It has three part such as auto-regression (AR), differencing (I), and moving averages (MA). These components is that the model is able to capture patterns of trends and seasonality to predict future values by historical data.

Auto-regression (AR)

The auto-regressive part (AR) of an ARIMA model is defined by the strong parameter dependence of the current observation on its previous values as,

$Y_t = C + \phi_1 Y_{t-1} + \ldots + \phi_p Y_{t-p} + E_t$

Here:

- Y_t is the current observation
- C is a constant
- ϕ_1 is the autoregressive parameters
- E_t represents the error term at time *t*

Differencing (I)

The differencing part of ARIMA provides transforming a non-stationary time series into a stationary one by differencing consecutive observations as,

$Y_t' = Y_t - Y_{t-1}$

Here,

- Y_t' is the differenced series at time t
- Y_t is the original series at time t
- Y_{t-1} is the value of the series at the previous time step

Moving Average (MA):

The moving average part (MA) offers the dependence of the current observation on the previous forecast errors as,

$Y_t = C + E_t + \theta_1 E_{t-1} + \ldots + \theta_q E_{t-1}$

Here,

- Y_t is the current observation
- C is a constant
- E_t is the error at time *t*
- θ_1 to θ_q are the moving average parameters

Example of Implementation of ARIMA by Python

The following Figure shows an implementation example of ARIMA model for time series forecasting in Python.

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from statsmodels.tsa.arima.model import ARIMA
from statsmodels.tsa.stattools import adfuller
from statsmodels.graphics.tsaplots import plot_acf, plot_pacf
impo rt warnings
import itertools

warnings.filterwarnings('ignore')
```

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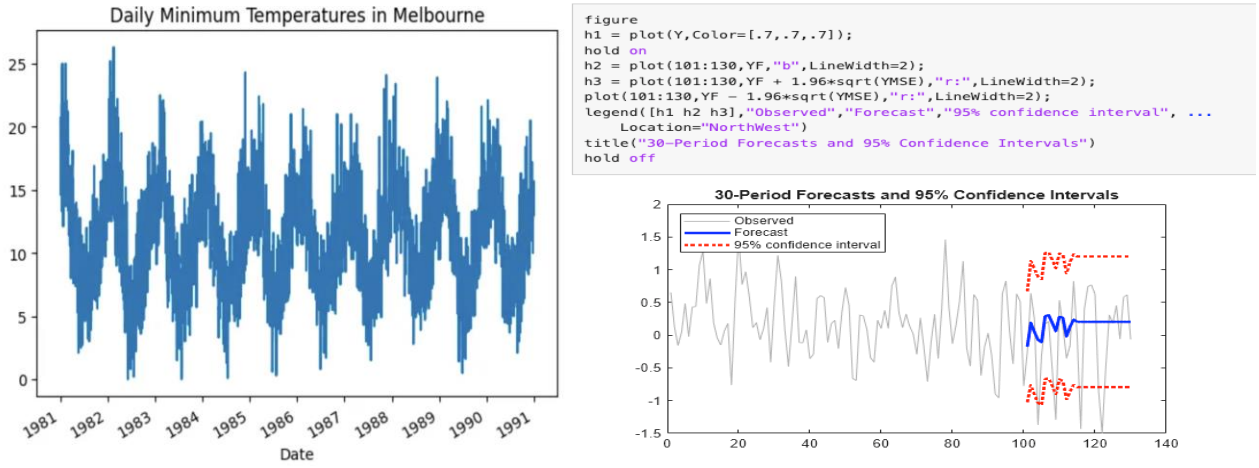

Fig. 1 Example of time series result by traditional method (Python) and Matlab tool

C. Vector Autoregression (VAR) Models

A vector autoregression (VAR) model is a multivariate time series model containing a system of *n* equations. The VAR models provides the multivariable linear time series model. In general, multivariate linear time series models are well defined as,

- Modeling the movements of several stationary time series simultaneously.
- Measuring the delayed effects among the response variables in the system.
- Measuring the effects of exogenous series on variables in the system. For example, determine whether the presence of a recently imposed tariff significantly affects several econometric series.
- Generating simultaneous forecasts of the response variables.

All of these models have the interconnectors between many economic variables and enables causality analysis, and provides the basis for deriving the impulse response function. These enable us to know the decomposition of the forecast error variance. However, there are some limitations that a large number of parameters to be evaluated. That is, there are the risk of overparameterization and the problem of overfitting with too short a time series. It is impossible to learn the non-linear system of economic areas and business.

III. STRATEGY OF RESEARCH FOR AI-BASED ECONOMIC MODELLING

A. Overview Status of AI Function for Econometrics Model Development

Basically, AI has a strong function for learn and prediction of economic system. The function of LLM provides to cover all over the world and every area, such as industry, art, movie product, story-telling, after unveiled ChatGP 4.0 in March 2023 following ChatGPT 3.5 in Nov. 2022.

This LLM released by OpenAI is changing technology paradigm and social, and giving an impact on everything and everywhere in our community and business. The basic theory of this technology is not so difficult and it impact on everywhere. Therefore, so many companies and countries are interested in developing or how to use this related technology.

This LLM (ChatGPT: Chat Generative Pretrained Transformer AI) technology has learning system (supervised learning, unsupervised learning, and reinforcement learning to train language) as basic learning and they combine for the situation effectively learning. The ChatGPT models are also not difficult to understand technology but its impact is a very huge and is changing social as well as the paradigm of research and coding.

The generative AI model based LLM (Large Language Model), TIM (Text-to-Image Model), and ITM (Image-to-Text Model) are rapidly increasing for applying in everywhere because a new generation of user-friendly tool (Generative AI: Chat GPT) is useful for texts, images, and videos.

Of course, economic effect of generative AI is quite huge such as automation by generative AI, heighten labour productivity by generative AI, higher education, and higher wages occupations. A new revolutionary paradigm of generative model will mainly impact on leading economic growth with the new content, LLM based collaboration swells, lifelong learning for old ages, and several tasks because its impact is wide and more profoundly in tasks such as storytelling writers, translators, customer servers, marketing, legal professionals, document analysis and makers, graphic designers, architects, artists, image generators, educator, students, and visual contents.

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The first aim of his paper is to provide study strategies on how generative model and related technologies apply to economic analysis processing and what we have to prepare and study econometrics. It is very important to understand and decide on how and what we have to do for the economic analysis process.

This AI technology has a very strong trigger role to develop new AI and has initiative in AI areas. There are several LLM and related LLM after releasing GhatGPT 3.5 and 4.0 for ChatGPT5o based technology. That is, many ChatGPT-based applications are developing it is changing for our economic growing pattern and job changing. This paper provides current patterns for ChatGPT technologies and its application for research process [132, 133, 134].

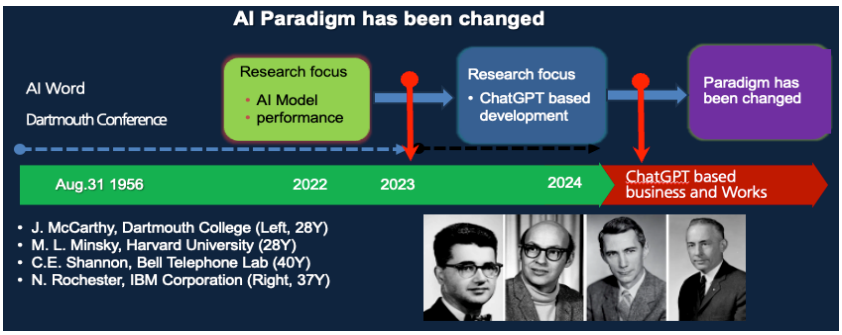

Fig. 2 Timeline of AI paradigm from 1956

Social Patterns Leading of LLMs based Techniques

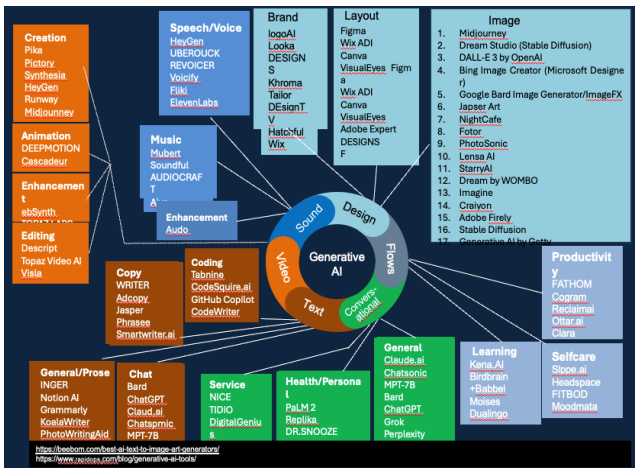

Fig. 3 Current functions of LLM models

Many companies are developing generative AI for application models (Appl) as well as basic models, related technologies, and coding methods after releasing of OpenAI. Its applications influence the marketing, art, industries, medical, and biotech as well as prediction and simple application, translation using GAN, transformer functions, and variational auto-encoders. The LLM combines with robots and its results have much more impact on education patterns. It means we can apply to econometrics analysis as shown in Fig. 3.

Major investments by Top 5 companies

Ref. [131] shows the market size of LLMs. Apple's stock price increased by 36% in 2023. The company's growth was largely driven by solid earnings for a consumer slowdown. Microsoft's stock price rose by 37% in 2023. The company's growth was supercharged by the excitement over generative AI, a technology to which Microsoft has close ties. Alphabet, the parent company of Google, saw its stock price increase by 39% in 2023. Like Microsoft, Alphabet's growth was fuelled by the hype around generative AI. Amazon's stock price grew by 44% in 2023. The company's growth was largely driven by remarkably solid earnings that de4ed earlier expectations for a consumer slowdown. Nvidia, a leader in AI and graphics processing units, saw a massive surge in its stock price by 159% in 2023. The company's growth was driven by the excitement over AI-related advancements.

Job Patterns

The potential benefits of the generative AI are to transform technology by using confusion and speed up to developing terms. Generative AI also can easily estimate productivity growth using wide and huge data. It will give an impact on widespread adoption and add trillions of dollars a year to global economic output (WJS).

Ref. [135] shows on how impact will give areas by generative AI by summarized author based on [135]. LLM-based economic patters is changing so fast and millions of employees at labor jobs including higher jobs have been decreasing by LLM based robots. It means so-called knowledge workers and white-collar professionals such as designer, art producer, movie producer, story teller writer, project manager, and so on. will be impacted more pain because of these fusion technologies based on generative AI.

Applications of generative AI ready to penetrate into business and many start-ups of generative AI based business is developing business system as well as generators for text, computer code, images, video, design, voice and music.

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Illustrators, healthcare workers, actors, educators, legal researchers, office workers and drug-company technicians could be the first occupations threatened with this new form of this AI.

Mckinsey predicts the impact of generative AI by business functions do vary but the report notes very compelling specific examples: Generative AI could increase sales productivity by 3-5% of current global sales expenditures. Across 63 use cases, generative AI has the potential to generate $2.6 trillion to $4.4 trillion in value across industries.

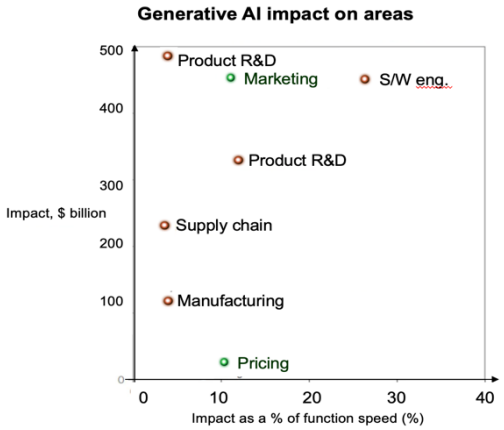

Fig. 4 Generative AI impact on each area [135]

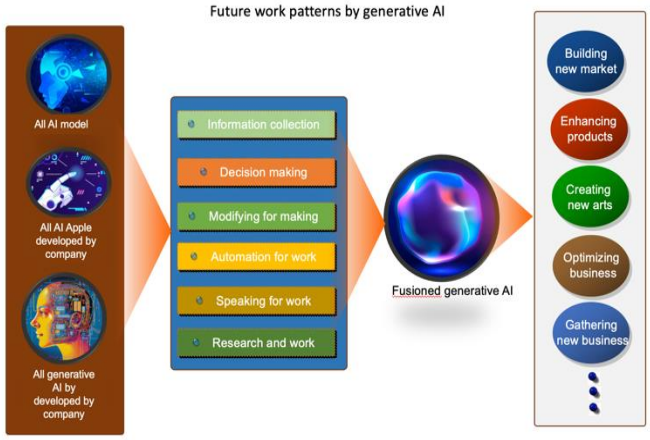

Fig. 5 Powerful functions of LLM

B. ChatGPT of OpenAI

This AI technology has a very strong motivation to develop new AI and has initiative in AI areas (Dinesh Katta, 2023, (Liam Frady, May 2023). Fig. 1 shows the timeline of ChatGPT development. We can see on how competition is struggle from this figure. It means the event of ChatGPT is quite big impact on economic area and job changing.

OpenAI do open their parameter to train, but they guess that ChatGPT-3 175 billion parameters. About parameter, they describe like: GPT-1, 117 million parameters; GPT-2, 1.5 billion parameters; GPT-3, 175 billion parameters billion parameters (it is about 100 times larger than GPT-2). And ChatGPT has 170 trillion parameters (Arianna Johnson, Forbes Staff, March 2023).

In case of ChatGPT-4 (Sanuj Bhatia, March 2023), it has different parameter such as, positional parameter (it is function is to understand the order of words in sentence), learned parameter (which is making an accuracy of learning through weights and bias tuning), hyperparameters (Definition of the overall model structure and model behaviour), and model configuration parameters (definition of the number of layer and nodes in each layer).

The number of parameters in a language learning model means a measure of model capacity for learning and complex understanding. That is, a language model with more parameters can learn more detailed and nuanced illustrates of language. So, it allows model to generate more accurate and human-like sentence. However, it needs a vast amount of computing power and energy, and it can be overfitting (It starts to learn noise in the training data instead of the underlying patterns). The ChatGPT (Partha Pratim Ray, March 2023) has an impact for AI revolution in real for everywhere and for many. It is clear evidence that the AI revolution has real potential.

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The ChatGPT (Partha Pratim Ray, March 2023) mentioned for the AI revolution in real for everywhere and for many. It is clear evidence that the AI revolution has real potential.

MS decided to invest $ 10 billion in OpenAI to develop ChatGPT and introduce a new technology into their Bing search engine. MS also said that they invest a $250 million fund to develop generative AI for startups in March 2023.

There are some reports (MIT review, 2021) that generative AI will change such as jobs (especially, a leading expert on the impact of technology) and GAI (Generative AI) will give a big influence on education and expertise. Basically, the ChatGPT will change many things such as word conversion, image transfer (image to text or vice versa), storytelling, image combining (protection against fraud or fake), and others. Therefore, there is able to happen large-scale unemployment.

About this, they can say that replacement of job will be some social issues or problems unemployment. Despite this worry about GAI, AI developers will continue to provide human-like capability AI by their creation. And the other hand, using these related technologies, they can improve the productivity of their workforce, and many reports predict that GAI will extend trillions of dollars in economic growth. Because a majority of the economy is developed and boosted by knowledge and its related combination in the 4th wave.

Technologies depend on how to use this technology to transform businesses and make life as we did in the earlier revolution. It is, so far, just a little bit better to do the task because of the young age of AI. However, it will increase efficiency and productivity. It also will allow us to create new ideas and processes to develop for customers.

C. Microsoft 365 Copilot and Bing

Basically, ChatGPT is a natural language model to learn by using machine learning, deep learning, natural language understanding, and natural language generation to answer or conversation. It is designed to human conversation by understanding your question or question.

This technology can do well cover letters and resume, creating list, describe arts, write code, summarize content, song lyrics, and similar contents using stored data. However, ChatGPT cannot have the capability to search the internet and the most updated information.

As MS 365 Copilot provides AI-powered personalized assistance for tasks and activities, it does not just connect ChatGPT and combines the large language models (LLM) with user data in the MS graph such as calendar, email, chats, documents, meeting records, and others.

MS released ChatBing Feb. 2023 and it likes OpenAI in the search engine Bing. MS is extending to Chrome and Safari unlike they used only Edge of the browser of MS. MA also unveiled a tool called TypeChat to connect the gap between apps and natural language communication on GitHub on July 24, 2023 (https://www.onmsft.com/news/microsoft-introduces-typechat-empowering-apps-to-communicate-in-natural-language-with-users/). They have an intension to build super-smart AI that can understand human language through a special library of TypeChat that helps apps use language better. MS is studying robot control using ChatGPT

Google Bard the chatbot, which was released under AI just like ChatGPT on March 21, 2023 for conversation with human. ChatGPT can be used only on the web browsers but Google bard can help in doing tasks like planning a vacation, meal planning, finding some reservation, and etc.

D. Meta

Meta opened its LLaMa2 as open source, which was pre-trained using 7 trillion, 130 trillion, 70 trillion parameters on July 18, 2023. They announced that FAIR (The Fundamental AI Research) of Meta also is studying through cooperation with Boston Dynamics on July 26, 2023 (http://m.irobotnews.com). LLAMA Model (Version 1) was developed from Dec 2022 to Feb. 2023, which is an auto-regressive language model based on the transformer and it can be trained easier because it is a smaller parameter than another model.

E. Other Chat Platform

There are other Chatbot platforms after releasing ChatGPT as we can see from Fig 1. It means its impact so big on the social, business, and job impact. For example, Google search with a text generator was opened by ChatSonic and AI. They also opened a test version of WriteSonic as free of charge, which lets users discuss topics in real time to create text or images.

The Jasper Chat platform enables content creators to specify keywords and tone of voice in users' prompts. Therefore, Jasper chat was focused on specially company's brand-relevant-brand content and conversations with customers.

YouChat is the AI chatbot of the German engine for fact-checking and source review. NeevaAI is a Germany search engine, which provides answers to quotes from original sources. Figure 6 shows the prediction of ChatGPT-based App, which will be developed in the future for their purpose quickly. As described in the previous section, ChatGPT will have

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an impact on many areas and jobs and replace their job patterns. Therefore, we must prepare and education will also be impacted from this related technology.

F. Economic Growth Leading of Generative AI Techniques

As we mentioned earlier, many companies are developing generative AI for application models (Appl) as well as basic models, related technologies, and coding methods. Therefore, its impact on economic areas increases. Generative AI tools the marketing, art, industries, medical, and biotech as well as prediction and simple application, translation using GAN, transformer functions, and variational auto-encoders. When generative AI is inserted into robots, its results have much more impact on economic growth.

Fig. 6 shows how generative AI can give an impact on everywhere. How it is. First impact is closer technology and engineering and second influence will education, health, smart city, and others as shown in Fig. 6.

Developer and Technology areas

The S/W developer and high-tech developer area will paradoxically be one of the most risk or challenging job because of ChatGPt's good information and guidance for developing. Everyone must continuously work and update on their job areas (it is a skill). Without doing that, you will not have advantages for your works because ChatGPT will do general work and guidance.

ChatGPT will collect data easily for the market and researchers have to use their knowledge to analyze the market for the customer through social media for developers and analyzers. Then, ChatGPT will provide for you to understand various aspects such as the emotional makeup of users, political preferences, cultural choices, religious convenience, education level, local (region), etc. Now, ChatGPT-generated content is not allowed in official organizers. However, these trends stimulate a good social media strategy and will be allowed officially. Therefore, there will be risks and challenges in jobs of expertise and developer, jobs with a lack of creator, jobs of analytical skills, repeatable jobs, and traditional methods using simple skills as well as low-wage jobs. Of course, the economic leading factor will change.

Creator and Designer

Basically, a human has an idea that novelists and art, composers are unique for humans as well as the creators and designers such as interior designers and outdoor designers, picture drawers, novel creators, and storytellers. However, these jobs will be impacted by ChatGPT because ChatGPT will make good overview conception and detailed thing. Especially, ChatGPT can use huge data and will make it immediately easier than humans.

By using unsupervised and supervised or reinforcement learning, generative AI processes enormous amounts of data to generate its own outputs by using network computing. Generative AI's abilities also go over human computing speed and high-quality content.

Through generative AI, computers can predict the most relevant patterns to input, allowing them to output corresponding content. During the training, a limited number of parameters are given to the generative AI models, enabling them to make their own conclusions and highlight features present in the training data. However, to get the most out of generative AI, human involvement is still essential, and that is both at the start and end of the training. It means creators and novelists will not be leading as economic growth impacts.

Arts

Artists such as music composition, drawing, and interior designers will be influenced by Generative AI. That is, AI is now frequently used in creative methods such as images, drawing, and using image data. AI-generated visuals of art models can be trained on a large number of paintings and later be used to generate new ones with similar features and slight variations in style as shown in Fig. 7.

For instance, when we want our AI to produce similar materials to Leonardo Da Vinci, we just provide it with as many paintings of Da Vinci as possible. The model's memory functions take the characteristics of Leonardo Da Vinci's painting from painting to reproducing similar works. We can reproduce many ideas and materials that generate text, produce music, etc. through the same works. Another advantage of generative AI is that we change the feature we get to another one of the images and modify the different styles or specific areas of the image. This occurs when the generative AI model copies the characteristics and aesthetic of your preferred painting and gives you an alternative version. It can also work with rough sketches or wireframes and offer a finalized version of the design.

Gaming

Generative AI can give many advantages to video games because generative AI easily gives levels of customer, dialogue patterns, entertainment areas. Generative AI can make new story through data-based experiences for players. Game's scenario can be developed by generative AI for game developers to train their generators to produce images according to the particular model of their games. Generative AI can give impacts for job pattern and economic growth factor.

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Healthcare

Generative AI provides services for healthcare and medical to treatment idea and solution on time because generative AI has an analysis function and for healthcare applications such as MRI scans, CT, X-ray. Because generative adversarial networks (GANs) have a very powerful learning to create fake versions of underrepresented data, it can be used in training and developing a model. It means generative has powerful influences on healthcare.

Sound generation

Generative AI has function to classify audio data and musical genres or human voices. With this function, generative AI can transform from one genre to another one such as rock into classical music, and vice-versa. Generative AI-driven software engine generates new music, composition, making use of gestures, motions, codes, and much more. Generative AI will change music society patterns.

Media and advertising

Basically, generative AI can create and modify content through stored data. So, generative AI can change the media industry. It will change marketing technique. Generative AI can make better understanding for consumer level.

Generative AI and Policy

With the emerging of generative AI, many countries have policy and strategy for AI initiative. Fig. 8 shows the market size of generative AI suggested by market research.

Major investments by Top 5 companies

Fig. 8 shows the market size of generative AI [ref.]. Apple's stock price increased by 36% in 2023. The company's growth was largely driven by solid earnings for a consumer slowdown. Microsoft's stock price rose by 37% in 2023. The company's growth was supercharged by the excitement over generative AI, a technology to which Microsoft has close ties. Alphabet, the parent company of Google, saw its stock price increase by 39% in 2023. Like Microsoft, Alphabet's growth was fueled by the hype around generative AI. Amazon's stock price grew by 44% in 2023. The company's growth was largely driven by remarkably solid earnings that de300ed earlier expectations for a consumer slowdown. Nvidia, a leader in AI and graphics processing units, saw a massive surge in its stock price by 159% in 2023. The company's growth was driven by the excitement over AI-related advancements.

Job Patterns

The potential benefits of the generative AI are to transform technology by using confusion and speed up to developing terms. Generative AI also can easily estimate productivity growth using wide and huge data. It will give an impact on widespread adoption and add trillions of dollars a year to global economic output (WJS).

Fig. 9 presents on how impact will give areas by generative AI. ChatGPT-based technology will be popular application and will take tasks from millions of employees higher than jobs have been diminished by only factory or warehouse robots. It means so-called knowledge workers and white-collar professionals will feel more pain because of these fusion technologies based on generative AI.

Applications of generative AI ready to penetrate into business, medical, legal documents, art, design, and so on. Many startups of generative AI develop chatbots system as well as generators for text, computer code, images, video, design, voice and music. Illustrators, healthcare workers, actors, educators, legal researchers, office workers and drug-company technicians could be the first occupations threatened with this new form of this AI.

Generative AI can play a crucial role using data-driven decisions and taking effective action. Research estimates that generative AI adoption in marketing reveals the potential saving of 40% of the average workday.

McKinsey's latest research estimates that generative AI and related technologies have the potential to absorb 60-70% of employees' time today.

Mckinsey shows the impact of generative AI by business functions do vary but the report notes very compelling specific examples: Generative AI could increase sales productivity by 3-5% of current global sales expenditures. Across 63 use cases, generative AI has the potential to generate $2.6 trillion to $4.4 trillion in value across industries.

G. The Research Strategy and Method Development on Impacting factor analysis of Korean Economic Growth at Emerging Technology base on Generative AI

Model Building and Data

This paper reviews many materials about the market position of generative AI and situation as well as basic technology, impacting factors. The issue is to obtain how we have to and what we have to have a solution for prediction of economic trend. To obtain this question, this paper suggests as draft model. Fig. 6 shows research strategy and Fig. 7 illustrates research process.

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$$m^k = m^{k-1} + arg\min_{h\in h}\{\sum_{i=1}^{n}(y_i - m^{k-1}(x_i), h(x_i))\} \quad (1)$$

First step is to make a proof dynamic equation through validated data to introduce LLM into equation (1). This equation is not correct because of so many incorrect data and parameters. This paper's first aim is to establish dynamic equation to search (find) elements (factors) of the impact of Korean economic growth by generative AI and define why it impact on economy growth factor of through simulation by using equation (2) and LLM.

$$(\alpha_1, \beta_1)=\underset{\alpha,\beta}{\operatorname{argmin}} \sum_{i=1}^{n} (y_i - \alpha - \beta^T X_i)^2 \quad (2)$$

Equation is just assumption equation to analysis of generative AI impact by deep learning method. Therefore, we modify and correct this equation through study in the future. This paper builds the dynamic equation microeconomic and prepare data to input and proof how it is correct through comparing with the traditional method by using deep learning.

Second step is to tune this dynamic equation for generative AI to application. This step is just to prove dynamic equation.

Third step is to build deep learning structure or so AI model to learn dynamic equation. Basically, there are so many data and parameters to influence on economy growth. With the traditional, it is not easy to study and we have to change parameter whenever we study and it is not correct sometimes. This paper suggests automatic simulation method by AI and we have to develop new model for simulation.

Fourth step is to totally suggest deep learning based study model and structure for generative AI impact of Korean economy growth.

Benefits of AI Application -Based Econometrics Analysis

AI-based macroeconomic forecasting can show better capture in nonlinearities of economic dynamics such as business sentiment indicators, relationships between unemployment rates and inflation, and others. AI like machine learning algorithms allows microeconomic and marketing modelling to predict consumer behavior, segment the market, or personalize offers in real time. AI-based financial analysis methods can obtain the results of complex patterns in high-frequency data, making it easier to detect market manipulation or create strategies. It is better quality of forecasts by taking into account non -linear relationships.

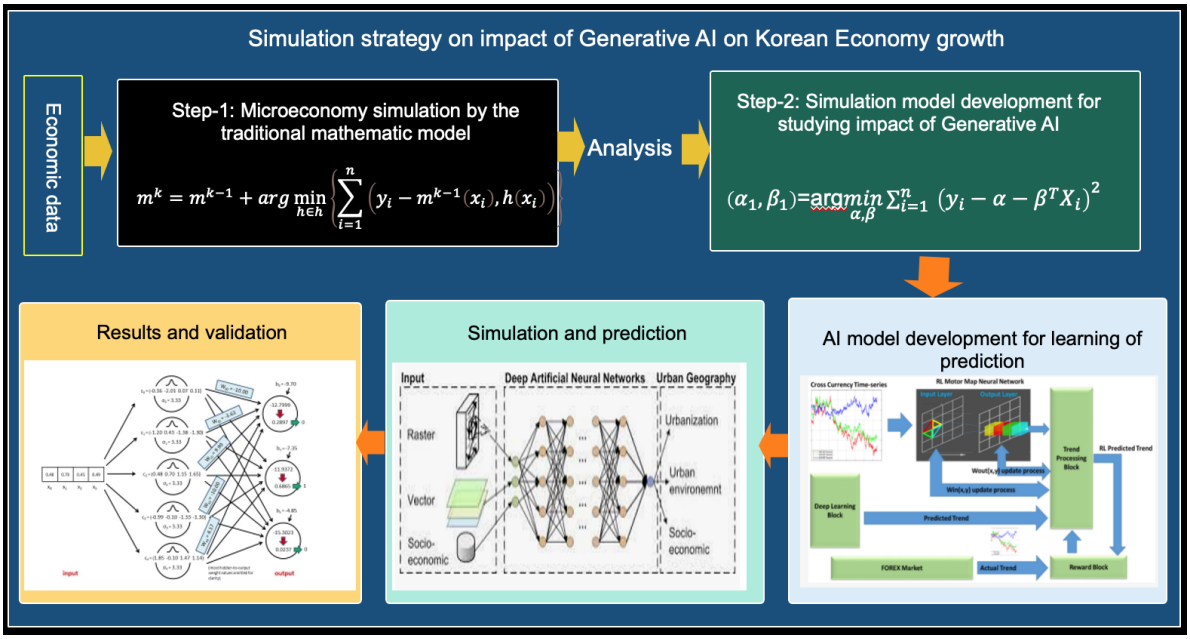

Fig. 6 Research strategy for Korean economy growth factor and impact by generative AI

Traditional economic models, such as linear regression, ARIMA or VAR, are still a key element of the analytical workshop of economists and market researchers, mainly due to the interpretability of results, knowledge of well -defined assumptions. However, with AI, there is an opportunity to better capture complex, non-linear relationships and use large, unstructured data sets. In the future, the role of AI methods will certainly continue to grow, but in combination (and not

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necessarily in replacement) with traditional models, which continue to provide an invaluable interpretative basis and a benchmark for economic inferences. The efficiency of machine learning can increase in computing accuracy and data sets in a wide range of economy.

Gross Domestic Product (GDP) is a key macroeconomic indicator that reflects the overall economic health of a country. Traditional methods, such as ARIMA or VAR, often have a limited ability to capture complex and non -linear interactions between macroeconomic variables (investment, consumption, fiscal policy, international trade.

Improved precision and nonlinearity: Neural networks and other AI algorithms allow you to capture complex, non -linear relationships between variables, resulting in higher prediction accuracy. Integrated data sources: The ability to combine macroeconomic, financial, text (NLP), and geospatial data increases the reach of your analysis.

AI is able to learn as new information comes in, which is crucial in conditions of rapid market fluctuations.

- Improving the accuracy of forecasts – thanks to the ability to model non-linear relationships.
- The ability to process huge data sets (Big Data) – which allows you to include a variety of information sources
- Reduction of the time needed to build models – thanks to the automation of the modeling process.
- Real-time analysis – using streaming technology.

The following sections discuss these advantages in detail, referring to empirical examples and research results that confirm the growing importance of AI in economics.

Improving Forecast Accuracy

One of the key applications of artificial intelligence in economics is to increase the accuracy of forecasting. Traditional econometric models, such as linear regression and the ARIMA time series, have limited flexibility in capturing complex, nonlinear interactions between variables. AI algorithms, such as Artificial Neural Networks (ANNs) and Random Forests, allow for deeper analysis of patterns in data and for taking into account a wide range of macro - and microeconomic factors. AI can model multidimensional phenomena, identify correlations between observations, and take into account nonlinearities, so they can improve the accuracy of forecasts in areas as important as GDP growth, inflation, and the labor market.

Random Forests, by combining multiple decision trees into a single model, reduce the risk of overfitting and are effective in classification and regression problems, which is particularly valuable in predictive analyses with a large number of explanatory variables.

The ability to perform real -time analysis is one of the most groundbreaking features of AI in economic applications. Traditional models are usually based on static historical data sets, which limits their effectiveness in a dynamically changing economic environment.

Thanks to stream processing techniques, data coming in continuously (Example, stock market information, sensor data, press releases) is integrated and processed by AI models on an ongoing basis.

Immediate response to market events, Updating forecasts in real time, Processing of various data sources (Example, social networks, announcements of central offices).

The Role of AI in Modeling Climate Change and its Impact on the Economy is related to global warming and sustainable development have become the subject of intensive research in economics, which is visible, m.in example, in the work on the so-called Green Macro Models. AI is a potential support in this area, enabling the integration of various data sources (meteorological, geological, economic) in order to estimate the impact of climate change on the level of production, international trade or the cost of capital.

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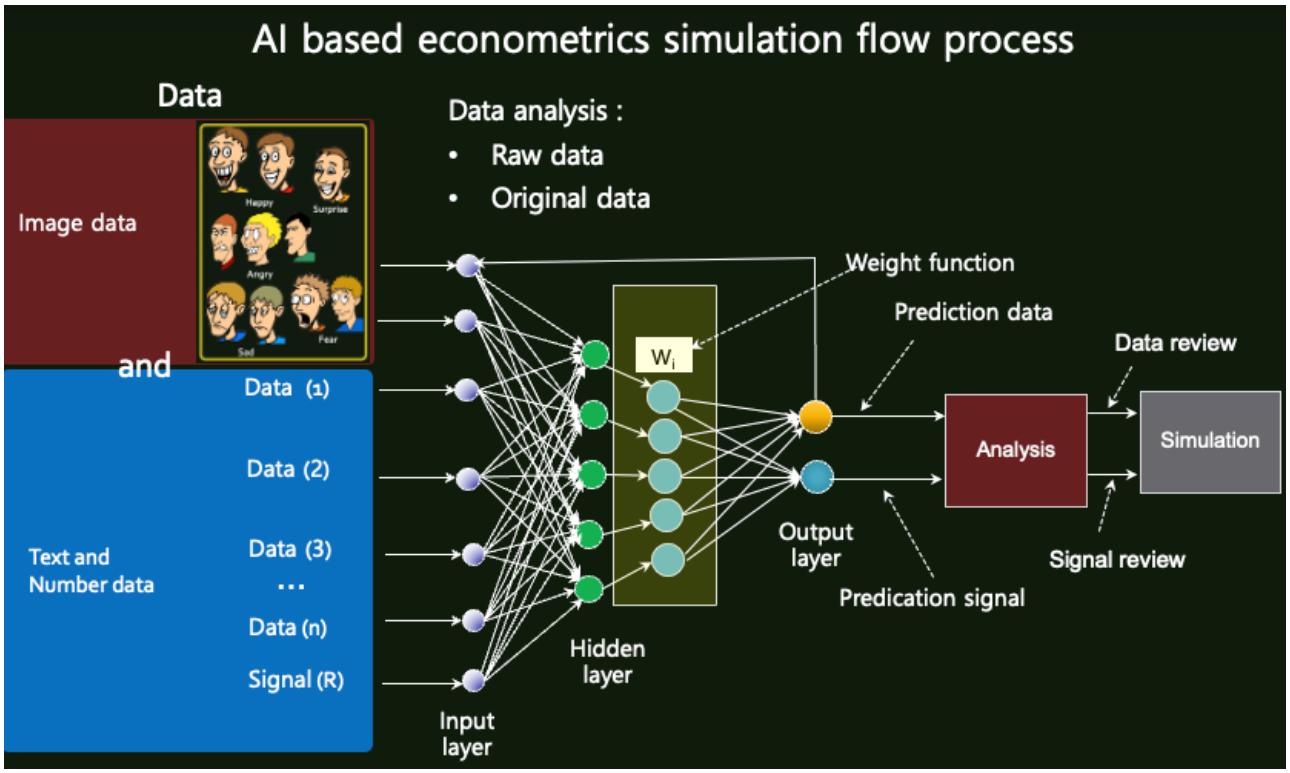

Fig. 7 Research process.

Ability to Process Huge Data Sets (Big Data)

The dataset can provide economists unprecedented access to real system, including financial data, social media, economic reports, geospatial data, and information on consumer behavior. Traditional statistical methods often fail to cope with such extensive and heterogeneous sets, both in terms of efficiency and interpretation of results.

Reduction of the Learning Time and Build Models

The process of building traditional econometric models like VAR can be time-consuming, requires data mining, checking statistical assumptions, selecting parameters and model structure. In the context of large, heterogeneous data sets, this time can increase to weeks or even months.

Real-Time Analysis

The ability to perform real-time analysis is one of the most groundbreaking features of AI in economic applications. Traditional models are usually based on static historical data sets, which limits their effectiveness in a dynamically changing economic environment.

The Importance of AI in Global Changing and its Impact on the Economy

The problem related to global warming and sustainable development have become the subject of intensive research in economics. The AI is a potential support in this area and enables the integration of various data sources such as meteorological, geological, and business in order to estimate the impact of climate change on the level of production, international trade or the cost of capital.

IV. CONCLUSION

This paper research strategy through reviewing many reports and papers on how generative AI apply on Korean economic analysis. All materials shown in this reviewing mention that generative AI impact is so high and should prepare for the future. At this point, we do not figure out what factors will give an impact on Korean economic leading factor because of short data and limited simulation. However, we should study and classify what factor will impact and how much will lead economic factor shown as Fig. 6 and Fig. 7. It illustrates well how much generative AI can increase economic growth and they say generative AI increase annual global GDP by 7 percent and we need development model research.

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As also shown in Fig.6, there are many things to consider for development. Application of generative AI and research methods illustrated in Fig. 6. So, we should develop research method depending on situation. That is why we suggest this research strategy and method as shown in Fig. 6. The strategy of Fig. 6 is not finished completely. So, this paper suggests you should modify for your purpose.

REFERENCES

[1] https://as.cornell.edu/news/understanding-mind

[2] https://complit.cornell.edu/laurent-dubreuil

[3] https://royalsocietypublishing.org/doi/10.1098/rsos.241482

[4] https://pmc.ncbi.nlm.nih.gov/articles/PMC7605294/pdf/TCMJ-32-339.pdf

[5] https://www.forbes.com/sites/jodiecook/2024/06/13/12-jobs-chatgpt-will-soon-replace-according-to-chatgpt/

[6] https://en.wikipedia.org/wiki/Fuzzy_logic

[7] https://ieeexplore.ieee.org/document/9680690

[8] https://ieeexplore.ieee.org/document/1007011

[9] https://ieeexplore.ieee.org/document/10459650

[10] https://en.wikipedia.org/wiki/Microsoft_Bing

[11] https://osf.io/preprints/psyarxiv/32mkv_v1

[12] https://en.wikipedia.org/wiki/Humanoid_robot

[13] https://www.globalization-partners.com/blog/ai-in-hr-2025-trends/?utm_keyword=&utm_device=c&utm_source=Adwords&utm_medium=cpc&utm_campaign=south_korea__search__dynamic__[en]&utm_content=dynamic&utm_term=&hsa_acc=9601202070&hsa_cam=16114158389&hsa_grp=136024901667&hsa_ad=676330086910&hsa_src=g&hsa_tgt=aud-1943664412463:dsa-1456167871416&hsa_kw=&hsa_mt=&hsa_net=adwords&hsa_ver=3&gad_source=1&gad_campaignid=16114158389&gbraid=0AAAAACdtKqtxJ3NonfXBFtZFxc5jTgaby&gclid=Cj0KCQjw5onGBhDeARIsAFK6QJYm8sXU1St8_4fNAEEjdXroEyOpJ5XCbB3-ST9OlM0YcP5ePLRkJBsaAk-5EALw_wcB

[14] https://ieeexplore.ieee.org/document/8778668

[15] 26] WEF report, Future of Jobs Report 2023

[16] https://www.axios.com/local/seattle/2024/02/09/chat-gpt-ai-workers-replace-employees

[17] https://www.washingtonpost.com/technology/2023/06/02/ai-taking-jobs/

[18] https://www.nexford.edu/insights/how-will-ai-affect-jobs

[19] https://ejsit-journal.com/index.php/ejsit/article/view/245

[20] DOI: 10.17148/IARJSET.2024.11904

[21] DOI: 10.17148/IARJSET.2025.12301A

[22] DOI: 10.35940/ijrte.C7860.0912323

[23] https://ibn.gov.np/uploads/documents/manufacturing-sector-full-versionpdf-1746-596-1730779871.pdf

[24] Brady D. Lund (2023). A Brief Review of ChatGPT: Its Value and the Underlying GPT Technology, University of North Texas. DOI:10.13140/RG.2.2.28474.06087

[25] Brady D. Lund and Ting Wang (2023). Chatting about ChatGPT: How may AI and GPT impact academia and libraries? DOI: 10.1108/LHTN-01-2023-0009

[26] https://www.wired.com/2016/03/sadness-beauty-watching-googles-ai-play-go/

[27] I. A. Zadeh (1965). Fuzzy set. Information and control 8, 338-353

[28] James McCaffrey (2011). AI-PSO Microsoft, 26(8). https://learn.microsoft.com/en-us/archive/msdn-magazine/2011/august/artificial-intelligence-particle-swarm-optimization

[29] Huang Chen etal. (2020). Bacterial Foraging Optimization Based on Self-AdaptiveChemotaxis Strategy. Computational Intelligence and Neuroscience, 1-15. https://www.hindawi.com/journals/cin/2020/2630104/

[30] Jerome H. Carter (2000). The Immune System as a Model for Pattern Recognition and Classification. J Am Med Inform Assoc., 7(1), 28-41.doi: 10.1136/jamia.2000.0070028

[31] Chung-Ang University (2021). AI education for K-12 in Canada and S. Korea, 1-24. https://www.reportlinker.com/p05478480/Global-Artificial-Intelligence-AI-Industry.html?utm_source=PRN.

[32] Ministry of education (2020). AI education in primary. Newspaper, Yonhap news

DOI: 10.17148/IARJSET.2026.13144

[33] Ministry (2019). Master course for AI teacher. EduPress

[34] Opening gambit- A history of chess AI and automation, Neural technology. https://neuralt.com/opening-gambit-a-history-of-chess-ai-and-automation/

[35] H.B.Jeon (2020). Survey of Recent Research in Education based on Artificial Intelligence. Electronics and Telecommunications Trends, 36(1), 71-80. DOI: https://doi.org/10.22648/ETRI.2021.J.360108

[36] A brief history of game AI uo to Alphogo.]https://www.andreykurenkov.com/writing/ai/a-brief-history-of-game-ai/

[37] UNESCO 2021. AI and education. https://creativecommons.org/licenses/by-sa/3.0/igo/

[38] K-12 AI curricula (2022). ED-2022/FLI-ICT/K-12

[39] Muslih Hakim et al (2020). "Deep Learning for Roasting Coffee Bean Quality Assessment Using Computer Vision in Mobile Environment, "IEEE conference, 2020.

[40] Dong Hwa Kim et al (2024). How to Prepare Agriculture Operations under the Impact of Chat-GPT Technology(Focusing on the Vegatable Harvest Mobile Robot and Gripper), DOI: 10.17148/IARJSET.2024.11904.

[41] Sakdipat Ontounm et al (2022). "Coffee roast intelligence, " arXiv:2206.01841v1 [cs.CV] 3 Jun 2022.

[42] http://jmc.stanford.edu/articles/aiphil2.html

[43] https://arxiv.org/abs/2409.15316

[44] https://arxiv.org/abs/1812.10901

[45] https://www.jstor.org/stable/10.5749/j.ctt14btggp

[46] https://theoryofknowledge.net/free-tok-notes/tok-optional-themes/knowledge-and-language/

[47] https://link.springer.com/chapter/10.1007/978-3-319-53237-0_17

[48] https://plato.stanford.edu/entries/locke/

[49] https://en.wikipedia.org/wiki/Sigmund_Freud

[50] https://plato.stanford.edu/entries/computational-mind/

[51] https://en.wikipedia.org/wiki/Mira_Murati

[52] https://model-spec.openai.com/2025-04-11.html

[53] https://www.theguardian.com/books/2017/mar/15/pachinko-min-jin-lee-review

[54] https://www.researchgate.net/publication/376957906_Image_Analysis_through_the_lens_of_ChatGPT-4

[55] https://wrtn.io/en/

[56] https://getliner.com/ko

[57] https://gemini.google.com/app?hl=ko

[58] John Locke, “Stanford Encyclopedia of Philosophy,” 2001.

[59] [7] Miloš Stanojevi´c, et al, “Modeling Structure-Building in the Brain With CCGParsing and Large Language Models,” Cognitive science, Vol. 47, 2023.

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DOI: 10.17148/IARJSET.2026.13144

[2]. - Home page: www.worldhumancare.wixsite.com/kimsite
[3]. - Research citations: https://www.researchgate.net/profile/Dong_Kim53Current, DSTSC. Executive.

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Global Research Collaboration:

Visiting Professor: University of Helsinki (Finland) & University of Eastern Finland (UEF); conducted research on Computer Convergence Economics.

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* Ministry of Trade, Industry and Energy (MOTIE) & KCCI: Discussion Advisor for the 1st and 2nd Korea-V4 (Visegrád Group) Economic and Trade Forum.

* Practical Industry Expertise:

* Intel APAC-CORP: Professional experience within the Asia-Pacific corporate division.

* European Union (EU) Framework Program: Served as the National Contact Point (NCP) for EU-FP SSH (Social Sciences and Humanities) in Korea.

Selected Key Activities & Presentations

* AI Strategy: Presented "Directions for Korean-style Artificial Intelligence" at the Dept. of Computer Science, University of Eastern Finland.

* Regional Science: Proposed national AI research directions and technical empathy frameworks at the ERSA (European Regional Science Association) Congress in Ireland.

* Industrial Engineering: Delivered keynote presentations on AI at conferences in Spain, leading to publications in SCI/Scopus indexed journals.

* Digital Education: Participated in economic feasibility discussions regarding AI-Digital curriculum with faculty at the University of Helsinki.

* Future Frontiers: Presented "3D Vectors of AI Sentiment" at Temple University (USA); currently pursuing patent registration for macroeconomic sentiment analysis.

Recently Selected Representative Publications

* Seo, D. S. "Impact of Brain Drain and AI on South Korea's Cybersecurity: Role of R&D and Financial Constraints." The International Journal of Advanced Smart Convergence, Vol. 14, No. 4, pp. 470-480, Dec. 2025.

* Seo, D. S. "Integrating AI in Energy and Agriculture: Climate Change and Economic Growth." Journal of Industrial Economics and Business, Vol. 16, No. 4, pp. 1-11, Nov. 2025.

* Seo, D. S. "Tariff Barriers and Software-Based Export Strategies: Convergence of EVs and Humanoid Robots." International Journal of Advanced Culture Technology, Vol. 11, No. 4, pp. 257-265, Jul. 2025.

* Seo, D. S. "AI Appliance and EV Energy Efficiency Competition between Korea and China: Analysis of AI Self-Development and Security." International Journal of Advanced Culture Technology, Vol. 11, No. 3, pp. 165-174, May 2025.

* Seo, D. S. "AI, Consumer Behavior, and Business Strategies: Lessons from Asia's Home Appliance and EV Industries." Asian Journal of Business Environment, Vol. 15, No. 2, pp. 57-65, Apr. 2025.

* Seo, D. S. "Energy Economics of AI Models for Climate Change: Climate Crisis Costs between US and China." Journal of the Korea Institute of Internet, Broadcasting and Communication, Vol. 25, No. 2, pp. 77-85, Apr. 2025.

* Seo, D. S. "The Chasm of the Inflation Era: Divergent Growth of EV and AI Economy." International Journal of Advanced Culture Technology, Vol. 12, No. 4, pp. 517-526, Dec. 2024.

* Seo, D. S. "Aligning AI Readiness and Sharing Digital Equity Efficiencies: Plan for Smart City." The International Journal of Internet, Broadcasting and Communication, Vol. 16, No. 4, pp. 148-160, Nov. 2024.

* Seo, D. S. "Self-Driving and Safety Security Response: Convergence Strategies in the Semiconductor and Electronic Vehicle Industries." The International Journal of Advanced Smart Convergence, Vol. 13, No. 2, pp. 25-34, Jun. 2024.

* Seo, D. S. "A Study on Impact of Deep Learning on Korean Economic Growth Factor." The International Journal of Internet, Broadcasting and Communication, Vol. 15, No. 4, pp. 90-99, Nov. 2023.

DOI: 10.17148/IARJSET.2026.13144

* Seo, D. S. "Study on the Failure of Autonomous Mobility in World Network Cities." The International Journal of Internet, Broadcasting and Communication, 15(3), pp. 73-81, Aug. 2023.
* Seo, D. S. "EV Spreads and Semiconductor Convergence Study according to Price Inflection Points." The International Journal of Internet, Broadcasting and Communication, 15(2), pp. 202-209, 2023.
* Seo, D. S. "A Study on the Shift of Innovation and Manufacturing Hubs to the United States." The Journal of Convergence on Culture Technology, 9(2), pp. 553-560, 2023.