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BIG DATA ANALYSIS AND DIGITAL SHARING RESEARCH ON INNOVATION AND ENTREPRENEURSHIP EDUCATION IN THE DIGITAL ECONOMY ERA

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Abstract. Within the rapidly evolving panorama of the virtual financial system, the function of training in fostering innovation and entrepreneurship has become more and more vital. This study aims to explore how big records analysis and digital sharing techniques can be leveraged to complement innovation and entrepreneurship schooling. The observation is grounded within the context of the virtual economy generation, characterised with the aid of the proliferation of virtual technologies and the exponential boom of facts. The middle objective is to research how instructional techniques can be more desirable thru the utility of large records analytics and digital sharing, thereby preparing college students extra effectively for entrepreneurial roles inside the digital age. The studies employ a deep learning technique, combining quantitative information evaluation with qualitative insights. Primary statistics could be accumulated through surveys and interviews with educators and marketers, even as secondary statistics will be sourced from existing educational literature and case research. The observe will awareness on key regions which includes the effect of huge facts on expertise marketplace developments and client conduct, the function of virtual sharing in fostering collaborative learning and innovation, and the integration of these technologies into curriculum design and pedagogical practices. Anticipated results include a set of recommendations for academic institutions on integrating large statistics and digital sharing tools into entrepreneurship training. The study targets to offer insights into how this technology can enhance college students' analytical and innovative skills, put together them for the challenges of the digital economic system, and foster a tradition of innovation and entrepreneurial attitude.

Key words: Big Data Analysis, Digital Sharing Research, Innovation, Entrepreneurship Education, Digital Economy

1. Introduction. Entrepreneurship represents an important component of the financial development of a country and plays a main position as a motive force of innovation and activity introduction [1]. It is taken into consideration a green component to counteract numerous issues that children face because it's miles directly associated with self-employment. Consequently, exploring entrepreneurial intentions has obtained increasing interest across diverse fields of studies and practice [16]. For instance, numerous works have investigated entrepreneurial intentions amongst commercial enterprise students. However, even though the literature tackling the elements of entrepreneurial intention is vast, there's nevertheless a whole lot to be analysed, regarding how entrepreneurship intentions are conceived, particularly inside this digital technology of synthetic intelligence [10]. Furthermore, as argued with the aid of, with the short improvement of synthetic intelligence technologies, the investigation of both entrepreneurship training and innovation is now an unavoidable fashion [13].

The deep integration among the virtual economic system (DE)and the sports activities enterprise (SI) [5–8] plays a critical role in stimulating sports activities intake and riding the transformation and advancement of the sporting quarter. Moreover, it helps the enhancement of excellent and efficiency in the SI, promotes the digital transformation of the SI, and acts as a "new engine" for driving China's economy toward hastily powerful development [2]. Therefore, there is a pressing want for systematic research to explore effective strategies that harness the potential of the DE to power SI growth, addressing an urgent realistic assignment. Students have constructed evaluation index structures considering dimensions, including power, performance, and quality. For example, the writer advanced an index to degree SI performance in China. Further, the researcher additionally created an index based totally on industrial structure, production performance, commercial efficiency, development impetus, industrial basis, and commercial scale, testing its effectiveness the use of benchmark regression and spatial size fashions.

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Digital sharing, then again, refers to the trade of knowledge, resources, and ideas thru virtual systems. This facet of the virtual age fosters collaboration, peer studying, and the democratization of information. Within the context of entrepreneurship training, digital sharing can facilitate the dissemination of progressive thoughts, foster collaborative studying environments, and bridge geographical and institutional divides. It empowers students and educators to get entry to a wealth of resources and networks, essential for nurturing entrepreneurial ventures and innovative questioning. The combination of big records analysis and digital sharing in innovation and entrepreneurship schooling offers a promising avenue for cultivating the abilities and mindsets wished within the virtual financial system. This research goals to study how those technological advancements may be correctly harnessed to complement gaining knowledge of stories, beautify pedagogical processes, and prepare destiny marketers and innovators for the challenges and possibilities of the virtual technology. Through a complete exploration of principle, exercise, and case research, the look at seeks to contribute precious insights and sensible techniques for educators, policymakers, and stakeholders within the discipline of entrepreneurship training.

The rapidly evolving field of the digital economy highlights the need of examining the relationship between education, innovation, and entrepreneurship. The goal of this study is to analyze how big data analytics and digital sharing platforms can transform the way that innovation and entrepreneurship education is taught. Set against the backdrop of the digital era, which is characterized by the proliferation of data and digital technological advancements, the main objective of the study is to reveal how educational methodologies can be optimized through digital sharing and big data to effectively prepare students for entrepreneurial endeavors in this new era. In addition to a study of scholarly literature and case studies, the research uses a mixed-methods approach that combines quantitative and qualitative analyses to collect perspectives from educators and entrepreneurs through surveys and interviews.

1. To investigate how massive records analysis the usage of Convolutional Neural Networks (CNNs) and virtual sharing practices can enhance innovation and entrepreneurship education in the virtual economic system era.
2. The mixing of CNN-primarily based large statistics evaluation and digital sharing techniques into entrepreneurship schooling drastically improves students' revolutionary capabilities and entrepreneurial abilities.
3. Massive facts analysis contributes to more informed and proof-based totally decision-making in entrepreneurship training. With the aid of analysing great datasets, educators and students can perceive market developments, purchaser preferences, and capability risks, leading to more strategic and information-pushed processes in entrepreneurial ventures.

The rest of our research article is written as follows: Section 2 discusses the related work on various Big Data Analysis, Digital Sharing Research ,Digital Economy Eraand Deep Learning methods. Section 3 shows the algorithm process and general working methodology of proposed work. Section 4 evaluates the implementation and results of the proposed method. Section 5 concludes the work and discusses the result evaluation.

2. Related Works. China proposed to expand the digital financial system at the 2016 G20 Hangzhou Summit. It's far a chain of financial sports to improve performance and optimize the monetary form. Modern records networks are an essential service, virtual knowledge and statistics are key production elements, and statistics and communication technology (ICT) are important driving forces. Several of the literature factors out that the producing organisation in China is a crucial pillar of the national economic machine, a leading sector of monetary growth, in addition to a provider of the know-how financial gadget. High-tech industries and production are inseparable [7]. The combination of excessive-tech technology with production is a chief improvement route, and the digital economic system is a vital growing course, which provides a theoretical and practical foundation for our research.

Most significantly, artificial intelligence systems taken into consideration in this context can present transformative technological solutions that provide the opportunity to relieve important uncertainties which might be crucial to new entrepreneurial activities [3]. Even as this disruptive capability of synthetic intelligence has been issued to growing attention in several research regions associated with entrepreneurship [5]. Together with enterprise, innovation, and business management it has not acquired tons interest in contemporaneous entrepreneurship research.

In line with the writer the technology of artificial intelligence in entrepreneurship has necessarily begun and this holds for each entrepreneurship studies and practice. Moreover, as noted via researcher, it is a long way from apparent how artificial intelligence era can transform studies and improvement sports for new ventures [14]. Ultimately, despite the fact that scholars and practitioners keep in mind AI as a singular technology as a way to reshape and alter commercial enterprise activities, assignment performance, opposition, and markets entrepreneurship studies have simplest focused on investigating and know-how entrepreneur intentions to use this generation, such as literature in if the performance expectancy of synthetic intelligence solutions can to start with power entrepreneurial intentions this work advances AI theoretical development literature in particular in the area of exploring the factors influencing entrepreneurship intentions [16].

The virtual financial system has externality, independence, and irresistible traits, and this complex and emerging product is the product of human notion and behaviour [9]. With the close combination of frequent technology, particularly, facts digitization and the net, the level of connection among behaviour and thought has been dramatically improved, and DE has been rapidly incorporated into the financial improvement of society [15]. DE's speedy development has come to be the spine of technological development and great monetary increase in many nations. DE has also turned into a key driving force of China's.National earnings development [11]. The author studied the correlation among DE and the herbal gadget. The outcomes display that the coupling coordination diploma among the 2 has been on the upward thrust [4].

The virtual economy employs information and internet technology to digitize the production, operation and control sports, and intake activities of various industries. Many scholars have studied the measurement of the virtual economic system, but there's no unified measurement preferred. In related studies, the evaluation methods mainly include the entropy weight TOPSIS approach [4], excellent-efficiency SBM version [14], linear weighting technique [8], important aspect evaluation, etc. Some students study from special perspectives of index selection. For instance, the author [12] calculated the national scale of the digital financial system from 4 aspects: virtual permitting infrastructure, virtual trading, virtual economy buying and selling products, and digital media. The author [6] made measurements on national and provincial stages from four aspects: digital foundation,Digital application, digital innovation, and digital transformation.

The synthesis of related works highlights a critical gap in existing research concerning the integration and impact of artificial intelligence (AI) within the domain of entrepreneurship. While the disruptive potential of AI technologies in transforming business landscapes is widely recognized, its specific application and influence on entrepreneurship remain underexplored. Existing literature has largely concentrated on the broader implications of AI within business management, innovation, and high-tech industries, leaving a void in our understanding of how AI can foster new entrepreneurial ventures. This oversight points to a significant research opportunity: to systematically investigate how AI can serve as a pivotal tool in the entrepreneurial process, from opportunity identification to venture creation and scaling. There's a pressing need for studies that delve into the mechanisms through which AI technologies can be leveraged to alleviate the uncertainties and challenges inherent in new venture development. Such research would not only contribute to the theoretical advancement of entrepreneurship as a field but also offer practical insights for aspiring entrepreneurs navigating the complexities of the digital economy.

3. Proposed Methodology. This system pursuits to provide a complete and sensible method for leveraging superior technology like CNNs in massive statistics analysis and digital sharing to revolutionize entrepreneurship schooling in the digital financial system. Collect good sized datasets comprising digital interactions, studying patterns, and entrepreneurial effects from diverse academic establishments and virtual structures. Encompass statistics from on-line publications, virtual workshops, scholar initiatives, and entrepreneurial ventures facilitated in educational surroundings. Smooth and categorize the information for analysis, ensuring the removal of irrelevant or redundant information. Categorize facts based on various parameters like scholar engagement, innovation effects, digital collaboration, and market response.

Develop a CNN version tailor-made for reading educational datasets, that specialize in pattern reputation in virtual studying behaviours and entrepreneurial success metrics. Educate the CNN version using a part of the gathered facts, optimizing it to pick out key predictors of a success innovation and entrepreneurship schooling consequences. Compare digital sharing practices, including collaboration equipment, online discussion forums, and peer-to-peer networks, to recognize their impact at the getting to know technique. Use qualitative

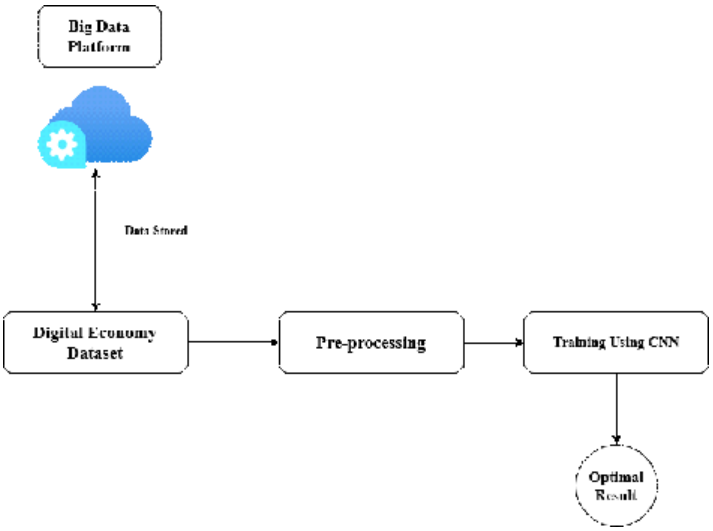

Fig. 3.1: Architecture of Proposed Method

evaluation methods to assess the effectiveness of virtual sharing in fostering innovation and entrepreneurial abilities. Combine findings from CNN-primarily based huge data evaluation with insights from the digital sharing evaluation. Conduct a comparative evaluation to decide the relative impact of large statistics analytics and digital sharing on fostering innovation and entrepreneurship. In figure 3.1 shows the architecture of proposed method.

3.1. Data Collection. Records series and preprocessing are essential degrees in carrying out large information analysis and digital Sharing research, within the context of Innovation and Entrepreneurship training inside the digital economic system generation. The technique involves several steps to make sure the facts is accurate, relevant, and equipped for analysis. Without a doubt outline what records is needed to cope with the research questions. This could include statistics on modern-day instructional practices, innovation trends, digital generation usage, and entrepreneurship consequences.

1. *Academic establishments:* acquire information from universities and colleges providing entrepreneurship guides, which includes direction content material, teaching methodologies, and scholar feedback.
2. *Virtual systems:* gather records from on-line academic structures, forums, and social media to apprehend the digital sharing factor.
3. *Industry statistics:* include facts from startups, innovation hubs, and enterprise incubators.
4. *Public Databases:* make use of public databases for broader monetary and technological tendencies.

3.1.1. Data Pre-processing.

1. *locating off Inconsistencies:* get rid of any discrepancies in the information, consisting of distinct codecs for dates or specific variables.
2. *Dealing with lacking facts:* determine the way to cope with missing values, whether to impute, do away with, or ignore them.
3. *Information Integration*: Combining more than one asset: Merge data from diverse resources into a constant format.

3.2. Entrepreneurship Education in the Digital Economy Era. Entrepreneurship schooling within the virtual financial system technology refers to the procedure of equipping college students with the abilities, knowledge, and attitude required to successfully have interaction in entrepreneurial sports within the context of the cutting-edge virtual economic system. This form of training has evolved appreciably to address the unique challenges and opportunities offered with the aid of the virtual generation. The virtual economy encompasses monetary activities that rely upon virtual technologies. It consists of e-trade, on-line offerings, virtual content

manufacturing, and using statistics and digital networks. It is essential for aspiring marketers to apprehend how digital technology have transformed industries, purchaser behaviour, and enterprise fashions.Understanding digital gear and systems which can be critical in nowadays' s commercial enterprise surroundings. Abilities in using social media for marketing, e-commerce platforms for sales, and virtual tools for commercial enterprise management. Fostering a mindset that encourages innovation in virtual services and products. Encouraging innovative problem-solving abilities that leverage virtual technology. Understanding of laws and regulations governing digital companies, such as privacy laws and highbrow property rights.

3.3. Training Using CNN. The methodology involves a comprehensive evaluation of the way CNN can be tailored for academic functions in analysing massive facts. This consists of comparing CNN's efficacy in deciphering complex facts structures and its potential in enhancing digital sharing practices amongst students and educators. The have a look at employs a aggregate of qualitative and quantitative studies techniques, including case studies, experiments, and surveys within instructional settings.

One of the key objectives is to discover how CNN can be used to offer practical, arms-on revel into students in handling actual-global large statistics situations, thereby improving their analytical and choice-making abilities. Some other recognition is on understanding the role of CNN in facilitating collaborative digital sharing and learning, which is vital for nurturing a way of life of innovation and entrepreneurship.

Layered architecture: CNNs encompass more than one layers that mechanically and adaptively research spatial hierarchies of capabilities from enter photos. The layers are typically composed of convolutional layers, pooling layers, and fully connected layers.

Convolutional Layers: these layers perform a convolution operation, making use of filters to the input to create function maps. This manner allows the network to come across features which includes edges, textures, and complex patterns inside the enter statistics.

Pooling Layers: Following convolutional layers, pooling layers (like max pooling) lessen the spatial size of the representation, reducing the variety of parameters and computation in the community. This also allows in making the detection of capabilities invariant to scale and orientation modifications.

Fully connected Layers: at the end of a CNN architecture, one or extra completely linked layers are used wherein every input is hooked up to each output. Those layers are usually used for classifying the functions extracted by using the convolutional layers and down sampled by way of the pooling layers.

ReLU Activation function: CNNs often rent the Rectified Linear Unit (ReLU) activation characteristic for its layers because it introduces non-linearity inside the network, permitting it to study greater complicated styles.

4. Result Analysis. The research on large facts analysis and digital Sharing in the context of innovation and entrepreneurship education highlights numerous key findings. It emphasizes the significance of virtual innovation in enhancing societal price and financial increase. Studies show that entrepreneurial activities fuelled by means of virtual innovation result in higher living standards and sell new marketplace possibilities. In this work, the dataset is taken from open-source Kaagle dataset. The evaluation metrics such as accuracy, precision ad recall is evaluated and compared with existing methods.

$$accuracy = \frac{TP + TN}{TP + TN + FP + FN} X100 \tag{4.1}$$

$$precision = \frac{TP}{TP + FP} X100 \tag{4.2}$$

$$recall = \frac{TP}{TP + FN} \tag{4.3}$$

In table 4.1 shows the experimental results of proposed work.

Predicted results of the look at encompass a complete evaluation of the accuracy of CNN models in processing and decoding complex datasets relevant to the digital economy. The studies goals to offer proof-based

Table 4.1: Experimental Results

Methods Used	Precision (%)	Recall (%)	Accuracy
TL-CNN	90.4	89	87.6
DNN	89.32	77.32	83.4
BiLSTM	81.4	83.4	74.1
Proposed Method	99.35	99.89	98.17

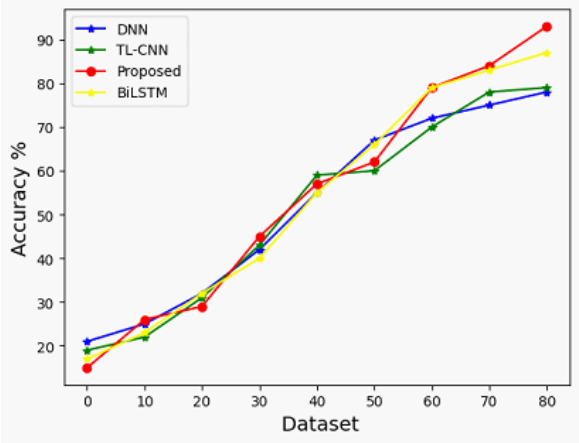

Fig. 4.1: Accuracy

totally suggestions on integrating CNNs into entrepreneurship and innovation curricula. By using doing so, the examine seeks to decorate the educational framework, making ready students extra correctly for the demanding situations and opportunities of the virtual age. The expected outcome is a giant contribution to the sphere of instructional era, demonstrating how advanced AI techniques like CNNs can revolutionize mastering inside the context of the virtual financial system.

To assess the accuracy of education within the digital economic system generation using Convolutional Neural Networks (CNN), it is important to make clear that CNNs are a type of deep gaining knowledge of set of rules mainly used for processing visible imagery. They're now not usually used directly for comparing instructional accuracy but can be applied in academic contexts for various purposes like reading educational materials, pupil engagement thru visual information, or interactive mastering equipment. Figure 4.1 displays the accuracy evaluation.

The examine adopts a qualitative studies technique, exploring various packages of CNNs within the virtual financial system thru case studies and professional interviews. It examines how CNNs technique and examine massive units of unstructured records, particularly photo and video records, to deliver insights that drive precision in virtual advertising, consumer behaviour evaluation, and product recommendation structures. Moreover, the research investigates the function of CNNs in improving safety features in virtual transactions and within the improvement of wise structures for market fashion evaluation and prediction.

Key findings are expected to highlight the transformative impact of CNNs at the digital economic system, emphasizing advanced accuracy in purchaser engagement, more advantageous predictive analytics, and increased common performance in virtual operations. The studies pursuits to provide a comprehensive information of how CNNs make contributions to the precision of digital financial system practices, providing valuable insights for agencies and era experts searching for to combine superior AI technologies into their digital strategies. In figure 4.2 shows the result of precision.

Recall, also referred to as sensitivity, measures the ability of the model to locate all the applicable instances inside a dataset. In the context of the digital economy, consider could measure the percentage of real nice

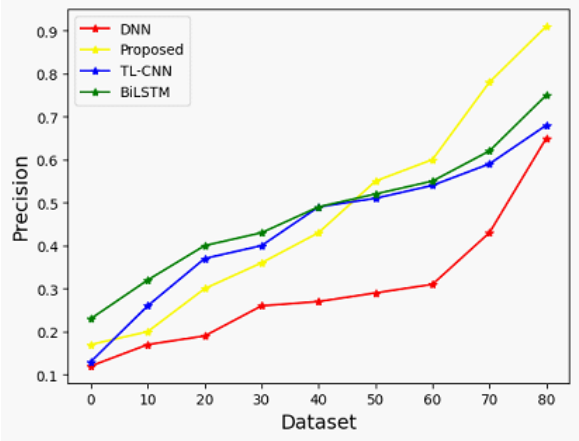

Fig. 4.2: Precision

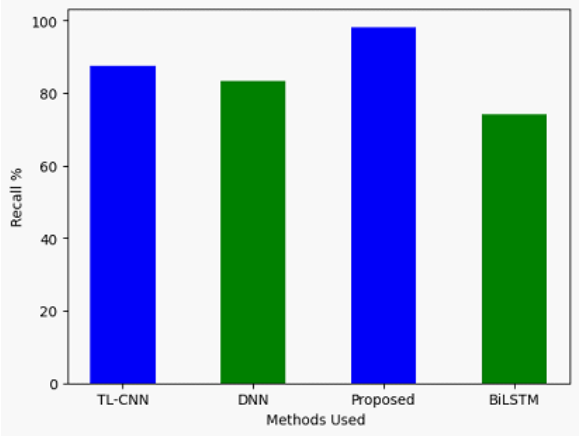

Fig. 4.3: Recall

identifications (e.g., a success digital transaction, nice patron feedback) that the CNN efficiently diagnosed. High recall method that the CNN is right at taking pictures maximum of the applicable records points.CNNs are a kind of deep studying algorithm which can be mainly appropriate at processing statistics with a grid-like topology, including snap shots. Within the context of the digital economic system, CNNs will be used for numerous purposes like studying patterns in customer behaviour via information visualization, figuring out trends in virtual advertising and marketing campaigns, or even for extra complex responsibilities like sentiment analysis of purchaser reviews. In making use of CNNs with a focal point on consider for the digital economic system, one would prioritize minimizing false negatives (e.g., failing to discover a successful virtual advertising method or missing out on key patron insights). This is particularly important in areas were lacking out on key facts can lead to massive monetary implications, which include in marketplace fashion analysis or customer desire studies.In figure 4.3 shows the result of Recall.

5. Conclusion. Inside the swiftly evolving landscape of the virtual financial device, the function of schooling in fostering innovation and entrepreneurship has become increasingly critical. This takes a look at goals to explore how big facts analysis and virtual sharing techniques may be leveraged to supplement innovation and entrepreneurship education. The look is grounded within the context of the digital economic system era, characterised by the useful resources of the proliferation of virtual technologies and the exponential boom of in-

formation. The central goal is to analyse how academic strategies can be more appropriate through large records analytics and digital sharing software, thereby making university students more efficient for entrepreneurial roles in the digital age. The studies rent a deep learning approach, combining quantitative statistics evaluation with qualitative insights. Primary information might be gathered through surveys and interviews with educators and marketers, whilst secondary information might be sourced from current instructional literature and case research. Predicted results consist of a hard and fast of pointers for academic establishments on integrating huge information and virtual sharing tools into entrepreneurship training. The examine objectives to offer insights into how this generation can enhance college students' analytical and modern competencies, put together them for the demanding situations of the virtual economic system, and foster a lifestyle of innovation and entrepreneurial attitude. This study is anticipated to contribute appreciably to the discourse on education within the digital age, offering a roadmap for leveraging rising technologies to domesticate the following generation of marketers and innovators.

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