



Exploring Architecture Modeling and Design Studio

¹*D.S. Bishore, ¹P. Ashika, ²M. Ramachandran, ²Kurinjimalar Ramu, ²Soniya Sriram

¹Sigma College of Architecture, kanyakumari, Tamil Nadu, India

²REST Labs, Kaveripattinam, Krishnagiri, Tamil Nadu, India.

*Corresponding author Email: bishore@sicarch.in

Abstract. Architects are generally highly respected in the community and architecture is an important career opportunity if you want to be seen as a respected person in the community. Because of their creativity and attention to detail, they are considered a blend of art and ingenuity. Architecture, which encompasses a variety of disciplines including art, science, history, geography and philosophy, is more difficult than many degrees to think creatively and technically. Architecture is an incredibly time consuming subject, with an average workload of 36.7 hours per week. Mathematics is difficult in architecture. In general, the mathematics required for architecture is not so difficult. You have to do addition and multiplication, create and solve equations; you do not have to pass an advanced calculus exam to work in the industry. The beauty of Architecture is about the performance and behavior of architectural structures and facade elements. The structural form should have an aesthetic appeal, while being driven by engineering ideas. They must have a variety of qualities, most of which must be well understood. Architects must have a strong understanding of all building fields, including architecture, electrical and mechanical engineering. Wisdom is needed. Being smart does not make you a better architect, it gives you a better foundation. A good architect wants to know anything and everything about a given project. They constantly ask questions, talk to superiors, seek feedback and stay in touch overall to make sure they are getting the project right.

Keywords: Visual thinking, Architectural modeling, Hospital design, Smart cities, Architecture design studio.

1. Introduction

Visual thinking Refers to events such as learning new information and organizing thoughts through visual processing. Also known as image learning, it helps to organize ideas graphically. In its most basic form, the meaning of visual thought is rooted in the ability to see words as a sequence of images. Visual thinking is the process of thinking through visual processing, also known as visual learning, spatial learning or image thinking. Think of it as essentially seeing words as a series of pictures. Many people with dyslexia often think in images as opposed to words, which is attributed to the unique activations in their brains. People with dyslexia are also more likely to form 3D spatial images in their minds than non-dyslexic people. The architectural model is a 3D representation of the proposed building design. With the architectural model, you can see the possible size and design of the construction or interior design project. The architectural model refers to the overall structure of the system. It contains the structural and behavioral components of the system. The architectural model can be defined as a diagram of the whole system. The set diagram comes under the architectural model. Creating a physics model allows an architect to explore the possibilities of the project and the possibilities of having different solutions. The brain always helps to think in 3 dimensions Design science research is a standardized research approach in which the object design process of a study is used to design a work of art while at the same time creating knowledge about design or artwork. According to Hewner, the main purpose of design science research is to gain the problem domain by creating and using designed artwork. Yes, this qualitative research! Design Science Research (DSR) is a research paradigm that is at the same level of behavioral research. A paradigm guides the decision about the method, which dictates the logic behind the choice of methods. Promoting Awareness for officials According to Meshke, it takes an average of three to six years to build a traditional hospital, from initial programming to keeping patients in bed. A hospital is defined in various terms as an organization involved in the health care system, prevention, treatment / development, immunization or rehabilitation services. Smart City uses information and communications. Improving the operational capability of technology sharing information with the public and providing better quality public service and citizen welfare. There are many ways to consider a smart city, but any successful endeavor will target the five basic areas in a holistic and integrated way: backbone infrastructure; City and community leadership structures; Stable distribution of services; Technological and innovative developments; and social community is A place for architects to create designs for structures and landscapes. Also known as the Architecture Studio, it is a place where architects create designs for all types of structures and surrounding landscapes.

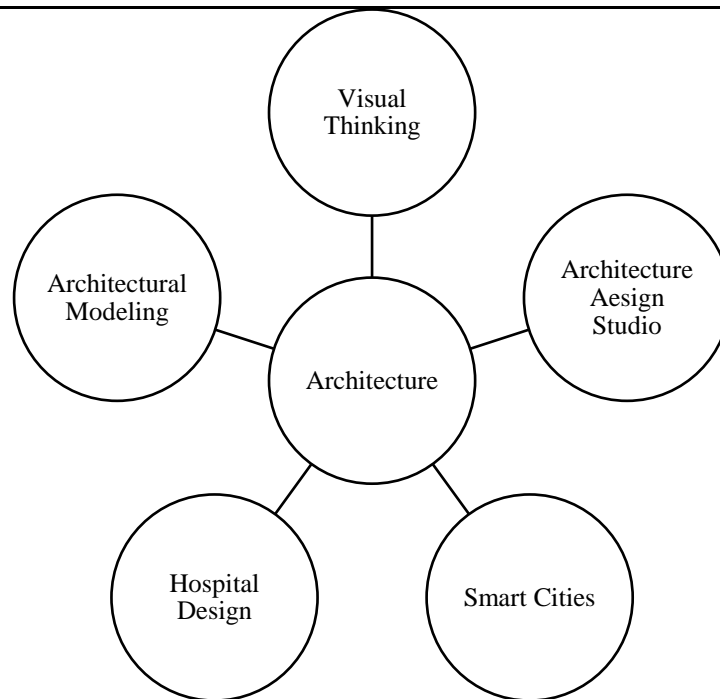


FIGURE 1. Architecture

2. Visual Thinking

The main cognitive scientist, for concept and visual thinking, has a vague position. Some people they think that it has nothing to do with cognition and should not be studied in the framework of cognitive psychology. Finally, see what that means for the visual thinking designer, especially the Architect. The need for visualization is recognized by all designers in various fields from art to engineering. How important and relevant it is to design is not what we refer to as visual thinking. Rather, it is interested here in helping to create ideas, to create ideas and to create shape in design. For most architects, visual application thought or imagination in creating a form reflects the artistic aspect of the design, which is intuitively characterized, aesthetically pleasing and responsive. Not necessarily for emotional needs and rational needs. Taken together, all of the above are basic approaches to visual thinking range from evaluating the creative elements of thought to pushing it towards its total depreciation or center and area. primitive thought. We believe that concepts of visual thought equivalent to vision or perception are misleading. We think that visual thinking functions are by no means at a lower level of development or cognition compared to linguistic thinking. Most of these utility studies focus on testing of computer systems. On the other hand, there are many studies on the visual thinking and cognitive behavior of designers during painting or drawing at the stage of concept formation. From the sum of the two for specific fields, it can be seen that there is a point of deficit. In research on sketching, most studies explore visual thinking. Poultry Designers use the computer as an image medium. The level of perception, cognition and visual thinking is the same when using conventional media, but the critical visual thinking of the painting is only briefly touched upon, research on designers' cognitive thinking should continue. This research project has an important approach towards visual thinking in the designer's painting. Currently, there is computer aided design. Prosperous, research that deals only with paintings, seems to be the use of conventional media, pens and paper is somewhat flawed. Visual thinking of imaging, looking here and focusing on details is more important than others. The important thing is that the visual thinking of the designer's intellect is why she develops ideas at the point of concept formation that are different when she uses the computer. Das Receive Relatively Little Antonin in the PLT OP Visual Thought. IP Programs Products Students Who Can Think Verbally, But They Are visual technicians but run the risk of creating writers who cannot move fluidly between and within communication systems. The driving force of this argument is verbal thinking and visual thinking identical, it cannot be accused that visual thinking is as mysterious and foolish and irrational as verbal thinking. But it cuts and overlaps, in parallel to other methods. Therefore, Visual thinking and verbal thinking interconnected and unique cognitive modes in their complexity. Visual thinking is the intuitive and intellectual process of visual thinking formation and problem solving. Lack of training destroys the ability to think visually. The importance of visual function is changed by focusing on verbal and numerical functions. Therefore, one should try to bring the intermediate syphilis Knowledge of visual thinking in our curriculum in other ways. We can begin by examining the teaching of disciplines with a long history visual communication theory and training. He reviewed the curriculum to ensure that our university confirms the diagnosis made by Ullman and Lincy. Based on the idea that quick painting is the key to effective visual thinking, a five-minute time limit was imposed. At the end of the semester they are given the same task, so after they are equipped with the necessary tools and techniques, they can evaluate their perception and execution of the same process. It is safe to say that more than half of our students do not express painting as a tool for visual thinking and creativity and thinking. This article reports the results of a pilot study. Introduce freehand sketching as a tool to nurture the creativity and visual thinking of engineering designers.

3. Architectural Modeling

These models generate more Much faster than simulations, which allows for efficient detection of transitions between parameters in different regions. Intrinsic transmission in bubble architectural modeling designed for the architect to control precision- Quick These will Increase confidence in the results and deliver in a positive way. This allows for a A A more thorough evaluation will increase confidence in new architectural ideas. The The parameters in the architectural design spaces can be grouped into some broad categories. We differentiate between cores and SMT environments, micro architectural parameters, and shared memory subsystem parameters. ANN models should enable the Exploring Large design spaces with reasonable time costs and computational resources. It should be noted that the time to train the samples is much shorter than that the simulated time by the architecture. Predicting the performance and power of applications implementing large-scale microprocessor configurations micro architectural design space. The specific complexity inherent Emphasis is placed on the design of large roofs in performance-based integrated architectural processes. As explained In the previous section, this work aims to expand the range of performance criteria considered in the geometric concept of architectural design, although it is a well-established practice in other design disciplines when looking at traditional architectural design processes. These are not individual steps, and designers usually explore only a very small number of alternatives in their work, generally considering only a small subset of the possible. Design candidates. As a result, most design processes focus on relatively small possibilities. The reasons for this are various. First, it is characterized by time constraints and other limitations in Architectural design exists in other design fields. The task Ideal aims to intensify such vertical changes in the context of architectural design. Work Ideal aims to intensify such vertical changes in the context of Architectural design. The design and its possibilities were recently explored. Many tools are available in the field of architectural design. Emphasis is placed here on the implementation of luxury-oriented architecture, with an emphasis on a library of reusable models and features. Process-based algorithms, mapping out model designs related to their functions and tabulating how operations can be rendered It acts Like the inputs for the model, other attributes derive data from them vary depending on them. This pattern is consistent even if the model is handled and variations of independent parameters create different geometric structures of the model. The location of the model one of the quickest, Realizing the difficulties in exploring the solution, the integration of the parameter modeling with other computational techniques. We are trying to create an algorithm Responsive design process through physical use Architectural space planning based techniques. However, we believe there can be a responsive design Used for many graphical design domains, OP Computer Technology of Kings Archaeological Design Processes is a development and democracy of the past has been going on for almost forty years. Since then, architects have continued to face the digital system.

4. Hospital Design

The safety implications of this growing research and hospital design have not always been well understood. No field database. However, the design of the hospital cannot be considered in relation to the safety of the patient and staff. In almost everything. It deals with safety situations, hospital design and more. Features Hospital design can directly improve patient safety. Hospital design can help reduce the incidence of morbidity, mortality, and, in some cases, morbidity and mortality by reducing nosocomial infections. Improving indirectly protecting the patient By reducing employee stress; Improving staff walking and endurance relocation and hand washing compatibility. On the contrary, it was very low. It was recently reported that the role of hospital design is a barrier. Despite the study the relationship Increased between hospital design and maintenance adverse events in hospitals. Over the past few years, there has been even more demand. Furthermore, specific elements of ward and hospital design are capable of revealing certain nuances of pediatric diseases, insanity, surgery, or whatever, in different decades of the nineteenth and twentieth century's. In fact cell and shelter share only one common feature. This was a feature that functioned as a lynchpin of the whole system, and it was to dominate the design of the hospital until the early days. Such close discipline of the body and its movements is equally evident in the plans of the wards for children mentioned earlier, and can be seen once again in modern schemes. The division of space and time according to the physical activity and privacy policies of the psychiatric units is one of the most notable features of these projects, and is closely linked to the development of Western domestic architecture. It is architecture of the social hierarchy that resonates throughout the nineteenth and twentieth century's, and helps to support the rigorous division of tasks that define modern medical practice. However, as madness became a disease throughout the nineteenth century, the architecture of the sanctuary became more and more like the General Hospital. The diseased mind was included in the wards, and with the birth of psychiatry the exact location was broken down according to different criteria. Formal literature reviews usually provide a set of design recommendations, but without recommending to designers what the relevant body design strategies for achieving those recommendations would actually be. This is in line with the general hospital design.

5. Smart Cities

However, their definition is not standardized due to the broad scope of smart cities. So the proposed architecture is different. The proposed architecture is discussed, outlining the design challenges and providing insight into the development of smart cities. Facing this challenge, realizing the well-documented benefits of smart cities, many research objectives are defined in the literature. However, just as the definition of smart cities is non-standard, so is its architecture. In smart cities, government, companies and institutions should provide various services to the citizens. Due to the vague definition of smart

cities, their structure is different without integrated criteria. as a consequence, numerous geniuses Can be found in the urban architecture literature. It focuses on various aspects such as technology, human system communication and logic. Here is a list of popular architecture that will help you better understand the basics. The city is divided into three. Mart Cities includes a complex and comprehensive data intensive computer and application system. The potential and utility of IoV does not meet the need for Smart cities for large-scale data realization, collection, information processing and storage. Achieves intelligent traffic and integrated management in Smart cities and other applications. The concept of smart cities has emerged as a strategy to mitigate the challenges of rapid and sustainable urbanization, while at the same time providing a better quality of life for its citizens. Smart cities are characterized by a comprehensive application of digital technologies. This article Provides a new global framework for IoV. Can be used for various communication models to meet the needs of smart cities. This section provides some test results for IoV networks in smart cities to provide insights for future research. There are many technical challenges in using. UIoV in smart cities. UIoV introduces faster mobiles compared to connected IoT nodes or objects within the network configuration. This is an important part of the investigation to balance the technological requirements for the optimal operation of the UIoV with appropriate incentives or rewards for use in smart cities. Therefore, this article aims to provide the essence of Smart Cities. The paper provides a brief overview of smart cities, followed by features and characteristics, typical architecture, composition and real-world implementations of smart cities. Finally, we present some of the challenges and opportunities identified by extensive literature study in smart cities. Environmental awareness in smart cities proposes new concept of mobile health. Improved health services indicate high QoL of Urban Citizens. Therefore, smart healthcare integration in smart cities is seen as a major turning point in the global implementation of the smart city concept. This section provides a brief overview of the challenges and opportunities for realistic implementation of Smart Cities. The challenges were identified through a comprehensive literature review conducted by recent research on smart cities. Therefore, proposing and testing Big Data analytics in real smart cities is a promising research opportunity for future smart cities. Protect sensitive data in connected environments. Of the many IoT-based services offered in smart cities, one of the primary priorities is waste management. Dealing with this type of service is challenging due to the fast growing pace of big cities and metropolitan areas. Each of these services can be customized to meet the needs of different types of app applications In the Smart City environment service delivery. This article proves an idea by implementing architecture that allows intelligent waste management. Despite the relevant results, there is still room for future investigations. Review technologies for smart cities by introducing short and long term maps towards smart cities. The computer infrastructure can be designed to meet the data storage and processing needs of cloud computing and smart city applications. On the one hand, we propose that end users citizens can collect data from their environment and, on the other hand, access environmental information from integrated information systems based on smart cities.

6. Architecture Design Studio

The purpose of students' approaches to the use of online design studios in higher education institutions in Jordan during Corona Viral Disease Lock 2019 and to discuss how their use can improve the learning process. Students and teachers are due to their personal circumstances while working and studying from home. Lack of teachers' Expertise in online teaching and the limitations of peer contact. Together, these factors can. Make the experience of online design studio more challenging. Due to locking policies, educators and students have experienced dramatic changes in their teaching and learning. methods. Campus design studios range from traditional teaching to virtual courses with limited experience and limited resources. There are studies It describes the design studio, but many of these provide fragmentary interpretations of the critique. In this paper, by review of publications related to the architectural design studio and identify the fundamental Factors that help to reveal variables that affect critical practice in design studios. Based on these factors, we propose an ideological framework that would allow studio instructors to plan and analyze their critical practice. Unlike the in the lecture course, in the design studio, students learn by working on projects that are asked to provide an effective solution to an imaginary design problem defined by the instructor. Such a polarized environment prevents communication between students and teachers, and between students and students. Relationships between people in the classroom are often controlled in some way. Architectural design studio, however, is a whole environment. The instructional methods used in the architectural design studio have the historical tradition of Ecole des Pioix-Arts. And its atelier model. Moore argues that instructors in architectural studios follow ingrained traditions from generation to generation without seriously studying the basic teaching. Design Studio system requires students to have an integrated knowledge of past and present subjects in a wide range of subjects. When this happens, design studio students are expected to visually and verbally and systematically present their ideas systematically and informally. The formulas of The most important issue for studios is Design Studies because the foundation of further architectural education is based on these design studios. This article focuses on discussions about studio-based design learning systems and integrated curriculum improvements. Design studios have a significant and innovative purpose structures. Including new approaches to technology, integrated design studios and Architectural education. In this education system each studio has its own integrated study. Integrated courses support design studios. This support may be theoretical or practical. The context of the relevant knowledge design studio can be found in this integrated description. Of course in some cases, in some cases the simulation program can be explained in some parts of the lesson. It requires more attention and research than other majors and departments. This is because sending problem-solving success rates in design studios to grading logos is much more difficult than multiple choice and open-ended questions. The primary interest of this paper lies in the standardization methods that claim to be criterion-based.

7. Conclusion

Taken together, all of the above basic approaches to visual thinking are derived from evaluating the constructive elements of thought, pushing its total depreciation to a basic and primitive level. area. thought. We believe that concepts of visual thought equivalent to vision or the comment is incorrect. We think of the scene thinking functions are by no means at a lower level of development or cognition compared to linguistic thinking. Most of these utility studies focus on testing of computer systems. On the other hand, there are many studies on the visual thinking and cognitive behavior of designers during painting or drawing during the concept development phase. The specific complexity inherent in performance-based integrated architectural processes is emphasized and explained by the design of large roofs. As explained the previous section aims to broaden the scope of Consider performance geometrically or geometrically by architectural design, alitog which Well established presence in other design sectors. These are no different steps when looking at traditional architectural design processes. The link Increased between hospitalization and care despite the study of adverse events in hospitals. Over the past few years, there has been even more demand. Furthermore, specific elements of ward and hospital design are capable of revealing certain nuances of pediatric diseases, insanity, surgery, or whatever, in different decades of the nineteenth and twentieth centuries. In fact cell and shelter share only one common feature. The paper provides a brief overview of smart cities, followed by features and characteristics, typical architecture, composition and real-world implementations of smart cities. Finally, we present some of the most widely identified challenges and opportunities literary research in smart cities. Environmental awareness in smart cities proposes new concept of mobile health. Improved health services indicate high. Therefore, the integration of Smart healthcare is seen as a key feature in smart cities turning point in the global implementation of the smart city concept. On-campus design studios range from traditional teaching to virtual courses, with only minimal experience and minimal resources. There are studies It describes the Design studio, but many of these offer piecemeal interpretations of the critique.

Reference

- [1]. Goldschmidt, Gabriela. "On visual design thinking: the vis kids of architecture." *Design studies* 15, no. 2 (1994): 158-174.
- [2]. Won, P-H. "The comparison between visual thinking using computer and conventional media in the concept generation stages of design." *Automation in construction* 10, no. 3 (2001): 319-325.
- [3]. Brumberger, Eva R. "Making the strange familiar: A pedagogical exploration of visual thinking." *Journal of Business and Technical Communication* 21, no. 4 (2007): 376-401.
- [4]. Janarthanan, Ramadoss, R. Uma Maheshwari, Prashant Kumar Shukla, Piyush Kumar Shukla, Seyedali Mirjalili, and Manoj Kumar. "Intelligent Detection of the PV Faults Based on Artificial Neural Network and Type 2 Fuzzy Systems." *Energies* 14, no. 20 (2021): 6584.
- [5]. Taborda, Elkin, Senthil K. Chandrasegaran, Lorraine Kisselburgh, Tahira Reid, and Karthik Ramani. "Enhancing visual thinking in a toy design course using freehand sketching." In *International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, vol. 45066, pp. 267-276. American Society of Mechanical Engineers, 2012.
- [6]. Kaur, Chamandeep, Mawahib Sharafeldin Adam Boush, Samar Mansoor Hassen, Wafaa Abushmlah Hakami, Mohammed Hassan Osman Abdalraheem, Najla Mohammed Galam, Nedaa Abdulaziz Hadi, and Atheer Omar S. Benjeed. "Incorporating Sentimental Analysis into Development of a Hybrid Classification Model: A Comprehensive Study."
- [7]. Jain, Prateek. *Start Your Own Enterprise: The Must Know-How Guide for an Entrepreneur*. Notion Press, 2020.
- [8]. C. Venkateswaran, D R Pallavi, M. Ramachandran, Vimala Saravanan, Vidhya Prasanth, "A Review on Promethee and Analytic Hierarchy Process with Its Application", *Data Analytics and Artificial Intelligence*, 2(1), (2022):34-39
- [9]. Jain, Nitin, Shanti Rathore, and Prashant Kumar Shukla. "Designing efficient optimum reduced order IIR filter for smoothening EEG motion artifacts signals." *Design Engineering* (2021): 5080-5101.
- [10]. İpek, Engin, Sally A. McKee, Rich Caruana, Bronis R. de Supinski, and Martin Schulz. "Efficiently exploring architectural design spaces via predictive modeling." *ACM SIGOPS Operating Systems Review* 40, no. 5 (2006): 195-206.
- [11]. Turrin, Michela, Peter Von Buelow, and Rudi Stouffs. "Design explorations of performance driven geometry in architectural design using parametric modeling and genetic algorithms." *Advanced Engineering Informatics* 25, no. 4 (2011): 656-675.
- [12]. C. Venkateswaran; M. Ramachandran; Sathiyaraj Chinnasamy; Chinnasami Sivaji; M. Amudha, "An Extensive Study on Gravitational Search Algorithm", *Materials and its Characterization*, 1(1), (2022); 9-16.
- [13]. Jain, Prateek. *The Unique Indian Market: Doing Business in India*. Notion Press, 2021.
- [14]. Ahirwar, Deshraj, P. K. Shukla, Kirti Raj Bhatele, Prashant Shukla, and Sachin Goyal. "Intrusion Detection and Tolerance in Next Generation Wireless Network." In *Next Generation Wireless Network Security and Privacy*, pp. 313-335. IGI Global, 2015.
- [15]. Martin, R. John, and Sujatha Sujatha. "Symbolic-Connectionist Representational Model for Optimizing Decision Making Behavior in Intelligent Systems." *International Journal of Electrical and Computer Engineering* 8, no. 1 (2018): 326.

- [16]. Arvin, Scott A., and Donald H. House. "Modeling architectural design objectives in physically based space planning." *Automation in Construction* 11, no. 2 (2002): 213-225.
- [17]. Stals, Adeline, Sylvie Jancart, and Catherine Elsen. "Parametric modeling tools in small architectural offices: Towards an adapted design process model." *Design studies* 72 (2021): 100978.
- [18]. Jain, Prateek. *Innovative Marketing: 30 types of Marketing for Small & Medium Enterprises*. Notion Press, 2021.
- [19]. C. Venkateswaran, D R Pallavi, M. Ramachandran, Sathiyaraj Chinnasamy, Chinnasami Sivaji, "A Study on Weighted Aggregated Sum Product Assessment (WASPAS) w.r.t Multiple Criteria Decision Making", *Data Analytics and Artificial Intelligence*, 2(1), (2022):26-33
- [20]. Shukla, Piyush Kumar, Lokesh Sharma, Kirti Raj Bhatele, Poonam Sharma, and Prashant Shukla. "Design, Architecture, and Security Issues in Wireless Sensor Networks." In *Next Generation Wireless Network Security and Privacy*, pp. 211-237. IGI Global, 2015.
- [21]. Kaur, Chamandeep. "The cloud computing and internet of things (IoT)." *International Journal of Scientific Research in Science, Engineering and Technology* 7, no. 1 (2020): 19-22.
- [22]. Gesler, Wil, Morag Bell, Sarah Curtis, Phil Hubbard, and Susan Francis. "Therapy by design: evaluating the UK hospital building program." *Health & place* 10, no. 2 (2004): 117-128.
- [23]. Joseph, Anjali, and Mahbub Rashid. "The architecture of safety: hospital design." *Current opinion in critical care* 13, no. 6 (2007): 714-719.
- [24]. Shukla, Prashant Kumar, and Akhilesh Tiwari. "Review on Relay Node Selection for Wireless Network." *International Journal of Computer Applications* 141, no. 3 (2016).
- [25]. D R. Pallavi, M. Ramachandran, Sathiyaraj Chinnasamy, "An Empirical Study On Effectiveness of E-Learning Over Conventional Class Room Learning – A Case Study with Respect to Online Degree Programmes in Higher Education", *Recent trends in Management and Commerce*, 3(1), (2022):25-33.
- [26]. John Martin, R., S. Sujatha, and S. L. Swapna. "Multiresolution analysis in EEG signal feature engineering for epileptic seizure detection." *International Journal of Computer Applications* 975 (2018): 8887.
- [27]. Prior, Lindsay. "The architecture of the hospital: A study of spatial organization and medical knowledge." *British Journal of Sociology* (1988): 86-113.
- [28]. Mclaughlan, Rebecca, Codey Lyon, and Dagmara Jaskolska. "Architecture as change-agent? Looking for innovation in contemporary forensic psychiatric hospital design." *Medical Humanities* 47, no. 4 (2021): e11-e11.
- [29]. Alnuaim, Abeer Ali, Mohammed Zakariah, Prashant Kumar Shukla, Aseel Alhadlaq, Wesam Atef Hatamleh, Hussam Tarazi, R. Sureshbabu, and Rajnish Ratna. "Human-Computer Interaction for Recognizing Speech Emotions Using Multilayer Perceptron Classifier." *Journal of Healthcare Engineering* 2022 (2022).
- [30]. Martin, R. John, and S. Sujatha. "Bottom-up Approach of Modeling Human Decision Making for Building Intelligent Agents." *Indian Journal of science and technology* 9, no. 4 (2016): 1-5.
- [31]. Pon Bharath; M. Ramachandran; Kurinjimalar Ramu; Sathiyaraj Chinnasamy, "A Study on Various Particle Swarm Optimization Techniques used in Current Scenario", *Design, Modelling and Fabrication of Advanced Robots*, 1(1), (2022):15-26
- [32]. Wenge, Rong, Xiong Zhang, Cooper Dave, Li Chao, and Sheng Hao. "Smart city architecture: A technology guide for implementation and design challenges." *China Communications* 11, no. 3 (2014): 56-69.
- [33]. Ang, Li-Minn, Kah Phooi Seng, Gerald K. Ijamaru, and Adamu Murtala Zungeru. "Deployment of IoV for smart cities: Applications, architecture, and challenges." *IEEE access* 7 (2018): 6473-6492.
- [34]. Alnuaim, Abeer Ali, Mohammed Zakariah, Chitra Shashidhar, Wesam Atef Hatamleh, Hussam Tarazi, Prashant Kumar Shukla, and Rajnish Ratna. "Speaker Gender Recognition Based on Deep Neural Networks and ResNet50." *Wireless Communications and Mobile Computing* 2022 (2022).
- [35]. Sharma, Yogesh Kumar, and Chamandeep Kaur. "The Vital Role of Virtual Private Network (VPN) in Making Secure Connection Over Internet World." *International Journal of Recent Technology and Engineering (IJRTE)* vol 8 (2020): 2336-2339.
- [36]. C. Venkateswaran; M. Ramachandran; Kurinjimalar Ramu; Vidhya Prasanth; G. Mathivanan, "Application of Simulated Annealing in Various Field", *Materials and its Characterization*, 1(1), (2022); 01-08.
- [37]. Silva, Bhagya Nathali, Murad Khan, and Kijun Han. "Towards sustainable smart cities: A review of trends, architectures, components, and open challenges in smart cities." *Sustainable Cities and Society* 38 (2018): 697-713.
- [38]. Marques, Patric, Diogo Manfroi, Eduardo Deitos, Jonatan Cegoni, Rodrigo Castilhos, Juergen Rochol, Edison Pignaton, and Rafael Kunst. "An IoT-based smart cities infrastructure architecture applied to a waste management scenario." *Ad Hoc Networks* 87 (2019): 200-208.
- [39]. Alnuaim, Abeer Ali, Mohammed Zakariah, Aseel Alhadlaq, Chitra Shashidhar, Wesam Atef Hatamleh, Hussam Tarazi, Prashant Kumar Shukla, and Rajnish Ratna. "Human-Computer Interaction with Detection of Speaker Emotions Using Convolution Neural Networks." *Computational Intelligence and Neuroscience* 2022 (2022).
- [40]. Khan, Zaheer, and Saad Liaquat Kiani. "A cloud-based architecture for citizen services in smart cities." In *2012 IEEE Fifth international conference on utility and cloud computing*, pp. 315-320. IEEE, 2012.
- [41]. Alnusairat, Saba, Duaa Al Maani, and Amer Al-Jokhadar. "Architecture students' satisfaction with and perceptions of online design studios during COVID-19 lockdown: the case of Jordan universities." *Archnet-IJAR: International Journal of Architectural Research* (2020).
- [42]. Oh, Yeonjoo, Suguru Ishizaki, Mark D. Gross, and Ellen Yi-Luen Do. "A theoretical framework of design critiquing in architecture studios." *Design Studies* 34, no. 3 (2013): 302-325.

- [43]. Abdullah, N. A. G., S. C. Beh, M. M. Tahir, AI Che Ani, and N. M. Tawil. "Architecture design studio culture and learning spaces: A holistic approach to the design and planning of learning facilities." *Procedia-Social and Behavioral Sciences* 15 (2011): 27-32.
- [44]. Rauf, Hozan Latif, Kagan Gunce, and Munevver Ozgur Ozersay. "Self-advocacy for first-year students in interior architecture design studios." *Open House International* (2020).
- [45]. Ozmehmet, Ecehan, and Ebru Alakavuk. "Integration process of theoretical courses with design studios in undergraduate education: Case studies of architecture and interior design studios." In *SHS Web of Conferences*, vol. 26, p. 01112. EDP Sciences, 2016.
- [46]. Utaberta, Nangkula, and Badiossadat Hassanpour. "Reconstructing a framework for criteria-based assessment and grading in architecture design studio." *Procedia-Social and Behavioral Sciences* 60 (2012): 142-149.