

Sri Ramakrishna Engineering College, Coimbatore 641 022
Department of Electronics and Communication Engineering
Evaluation of Project Work

| Title of the Project | | Academic Year | |
|---|--|---|--------|
| Retail Demand Forecasting using CNN-LSTM Model | | 2021-2022 | |
| Project team | | Supervisor | |
| 1. Karthik K (1902102) 2. Nithin Soundar S J (1902132) 3. Rithick Roshan R (1902156) | | Mr. T. Rajasekar, Assistant Professor, ECE. | |
| Abstract | | | |
| <p>The project work proposes a deep learning model to predict the stock that would be required by a store in a particular period with the help of historic information such as past sales. This task could help a business to run smoothly and make sound decisions but are very hard to predict accurately. A CNN- LSTM (Convolutional Neural Network- Long Short-Term Memory Network) model is proposed to forecast retail demand. This model equips the Swish Activation Function. This works better than the traditional and most successful activation function ReLU (Rectified Linear Unit). Data from 10 stores each consisting of 50 items are taken as input. This proposed work has implemented various other models such as Multilayer Perceptron, Long Short-Term Memory cells, Convolutional Neural Networks to predict sales. The experiment results suggest using CNN- LSTM Model as it has considerably lower RMSE (Root Mean-Squared Error).</p> | | | |
| Strengths and Limitations of the Project Work | | | |
| <p>Strengths</p> <ul style="list-style-type: none">▪ One can gain valuable insight▪ One can learn from past mistakes▪ One can learn from past mistakes <p>Limitations</p> <ul style="list-style-type: none">▪ It can be time-consuming and resource-intensive | | | |
| PEO: I,II,III | | Program Outcomes: 1,2,4,5,6,7,8,9,10 | PSO: I |

PEO,PO,PSO:

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

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| PEO 1 | Excel in professional career to provide engineering solution by demonstrating technical competence and by acquiring knowledge in electronics and communication engineering |
| PEO 2 | Identify, analyze and formulate problems to offer appropriate design solutions that are technically superior, economically feasible, environmentally compatible, professionally ethical and socially acceptable |
| PEO 3 | Achieve progress in professional and research career through communication skills, team work and knowledge up gradation through higher education |

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

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| PO 1 | Engineering Knowledge Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems |
| PO 2 | Problem Analysis Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences |
| PO 3 | Design/Development of Solutions Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations |
| PO 4 | Conduct Investigations of Complex Problems Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions |
| PO 5 | Modern Tool Usage Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations |
| PO 6 | The Engineer and Society Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice |
| PO 7 | Environment and Sustainability Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development |
| PO 8 | Ethics Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice |
| PO 9 | Individual and Team Work Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings |
| PO 10 | Communication Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions |

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| PO 11 | Project Management and Finance |
| | Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments |
| PO 12 | Life-Long Learning |
| | Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change |

PROGRAM SPECIFIC OUTCOMES (PSOs)

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| PSO 1 | Specify, design, implement and test digital and analog electronic systems using state of art component and software tools |
| PSO 2 | Architect and specify the analog and digital communication systems as per the performance requirement specifications |
| PSO 3 | Understand and specify the components of RF/Wireless communication systems |