Ziroh Labs is pleased to place the order on you for the development of a consultancy project

titled **"A Survey of Convolutional Neural Networks: Analysis, Applications, and Prospects”** with the following modules for the mentioned project per the specified requirements.

| **Title** | **A Survey of Convolutional Neural Networks: Analysis, Applications, and Prospects - GoogLeNet** |
| --- | --- |
| **Students**  **and Faculty** | **Students:** [Arnav Thakare](mailto:1032211906@mitwpu.edu.in)**,** [Arya Bhatt](mailto:philoguy06@gmail.com)**and Nidhi Dhamne**  **( A group of students ( minimum 3, maximum 5) with proficiency in Java, including its knowledge and the ability to write code, to be selected by the Institute is essential).**  **Faculty:** [SUSHILA PALWE](mailto:sushila.palwe@mitwpu.edu.in)  **( A Group must be mentored by a University professor who is well-versed in AI & ML**..**It’s a must to provide the profile of the professor as well. While the professor can actively contribute to the project, their minimum role is to ensure that students comprehend the assigned model and that all milestones are completed on time).** |
| **Objectives** | **This project aims to check the ability to write AI models from scratch.**  **The types of models are Transformers, Convolution Nets, and a few more.**  **Models will be built using a Java-based distributed graph framework named Zunu Compute. Ziroh Labs will explain how to create model graphs that span thousands of machines.** |
| **Methodology** | * **Students and their respective mentors must select a model, define the project scope, and then start coding.** * **Write AI models from scratch.** * **The group cannot use any existing framework, e.g., PyTorch, TensorFlow, NumPy, Keras, etc, while writing the code.** * **All mathematical functions that are present in the model architecture need to be implemented from scratch.** * **Mathematical functions such as convolutions, various pooling strategies, and different activation functions must be implemented in Java.** * **Programming Language is only Java.** * **All functions must be built using Java Generics.** * **Test the model using Publicly available datasets provided by Ziroh Labs.** * **Benchmark the model.** * **Ziroh Labs will provide the benchmark parameters and the statistical models to derive results.** * **Ziroh Labs can provide machines if needed.** * **Ziroh Labs will provide a mentor for theoretical and Programming assistance.** * **40 different types of Models will be provided. Groups have to choose at most one from it.** * **Models include Transformers, Convolutional Nets, and others.** |
| **Milestones** | | **Duration** | **Milestones** | | --- | --- | | **2 weeks** | **Thoroughly understand the selected model and do a small 30-minute presentation.** | | **2 weeks** | **Understand Zunu Compute and do a 1-hour presentation.** |  | **4 weeks** | **Implementing the model, along with the benchmark studies and benchmark the results.** | | --- | --- | | **4 weeks** | **A white paper on the project (including a comparison of the resultant benchmark with the provided benchmark of the model given by Ziroh Labs).** | | **4 weeks** | **Train and Test the datasets.** | |

| **Total Time** | **4 months** |
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| **Budget** | **INR 25,000 + GST** |

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