Final Year Project: Title Selection

Gibberish:

What kind of title to select? Which field of domain to research on? Do research based or product based?

Plan is to do research-based project to learn new stuff instead of doing things already know so need research,

As a growing field, which will be the future, researching and making product related to AI is good, AI is basically an umbrella term and there are many branches of AI,

Some are:

Reinforcement Learning: Agent is trained to make decision based on incentives and penalties

Explainable AI (XAI): Make AI more transparent and understandable to humans

Generative Adversarial Networks (GANs): Neural Network to create new data from existing data

Natural Language Processing (NLP): Computer’s prospection and interpretation of human language

Computer Vision: teach machine to understand picture and movies

Deep Learning: Neural networks are trained using massive volume of data.

Ethics: Proper development and application of AI technology

Autonomous Robotics: Development of robots which function without humans

More Gibberish:

Do we basically use large data and train the model to suit the project in AI? What need to be done and researched to create project in field of AI,

Do I collect data and get a model and create project? Or do I just use algorithm

If not able to select title in research field, can make product for applications like VPN? Charity App.

Some projects found in Internet:

Facial Recognition:

Facial Recognition when payment,

Facial emotion recognition for people with disability like bipolar disorder, schizophrenia, depressive disorder, others.,

Facial Recognition of sika deer based on vision transformer?

All of these use Vision Transformer?

What is vision transformer? What is CNNs?

Identifying object based on image?

Recommendation System

Hybrid recommendation system: integrates feature from content-based and graph-based recommendation system and COOT Optimization is used to optimize the result

Book recommendation system: Hidden Markov assisted chaotic artificial humming bird with Discriminant Analysis and weighted fuzzy ranking (HMCAHB\_DA-WFR) model to classify book according to department accuracy based on general ranks and provide better recommendation. Data will be taken from Bhilai Institute of Technology, Durg.

Traditionally, relies on user meta data to determine weight distribution of base recommenders, so we use Adaptive Indexing and Recommendation (AIRE) model which relies on interaction and memorizes the patterns and characteristic with in representation. It takes advantage of few-shot learning and learns the base recommender representation through a prototype network.

E-content recommendation: considers user learning capability. Its categories document into basic, intermediate and advanced levels. Parts-OF-Speech (POS) tagging, Term Frequency- Inverse Document Frequency (TF-IDF) and semantic similarity based on WordNet are extracted and the multiclass Support Vector Machine (SVM) is employed.

Food recommendation with Dual attention in Heterogenous graphs (HFRS-DA), for unsupervised representation learning on heterogeneous graph-structured data. HFRS-DA utilizes an attention technique to reconstruct node features and edges and employs a dual hierarchical attention mechanism for enhanced unsupervised learning of attributed graph representations.

Bandit algorithm for limited-budget recommendation system: linear UCB (with hybrid estimator) based adaptive linear programming (LinUCB-Hybrid-ALP) algorithm. The proposed algorithm provides adaptive linear programming with LinUCB to approximate the oracle of its corresponding constrained contextual bandit problem. we use LinUCB with a Hybrid model to estimate the expected reward of each arm; then, the algorithm pulls an arm according to a probability distribution determined by an ALP (adaptive linear programming) with a limited budget. Finally, we conduct extensive experiments to demonstrate the effectiveness of LinUCB-Hybrid-ALP on both synthetic data sets and real-world recommendation datasets.

Bandit Algorithm: Epsilon greedy, Upper Confidence Bound (UCB), Thompson Sampling

Search Engine

Virtual Assistance/ Chatbot

Hate Speech Recognition

Use of Multi scale kernel attentive visual (MSKAV) module that uses an efficient multi branch structure to extract discriminative visual feature. It also contains novel “Knowledge distillation-based attention caption” (KDAC) module.

Multilingual hate speech and cyberbully detection model using bagging stacking based hybrid ensemble deep learning techniques. This model utilizes Bi-directional Long shot term Memory (BiLSTM), Bi-directional Gated Recurrent Unit (Bi-GRU), Convolutional Neural Network (CNN), and long short-term memory (LSTM) techniques to enhance the overall performance.