



INSTITUTE OF ENGINEERING & MANAGEMENT
Good Education, Good Jobs

CAREER RECOMMENDATION CHATBOT

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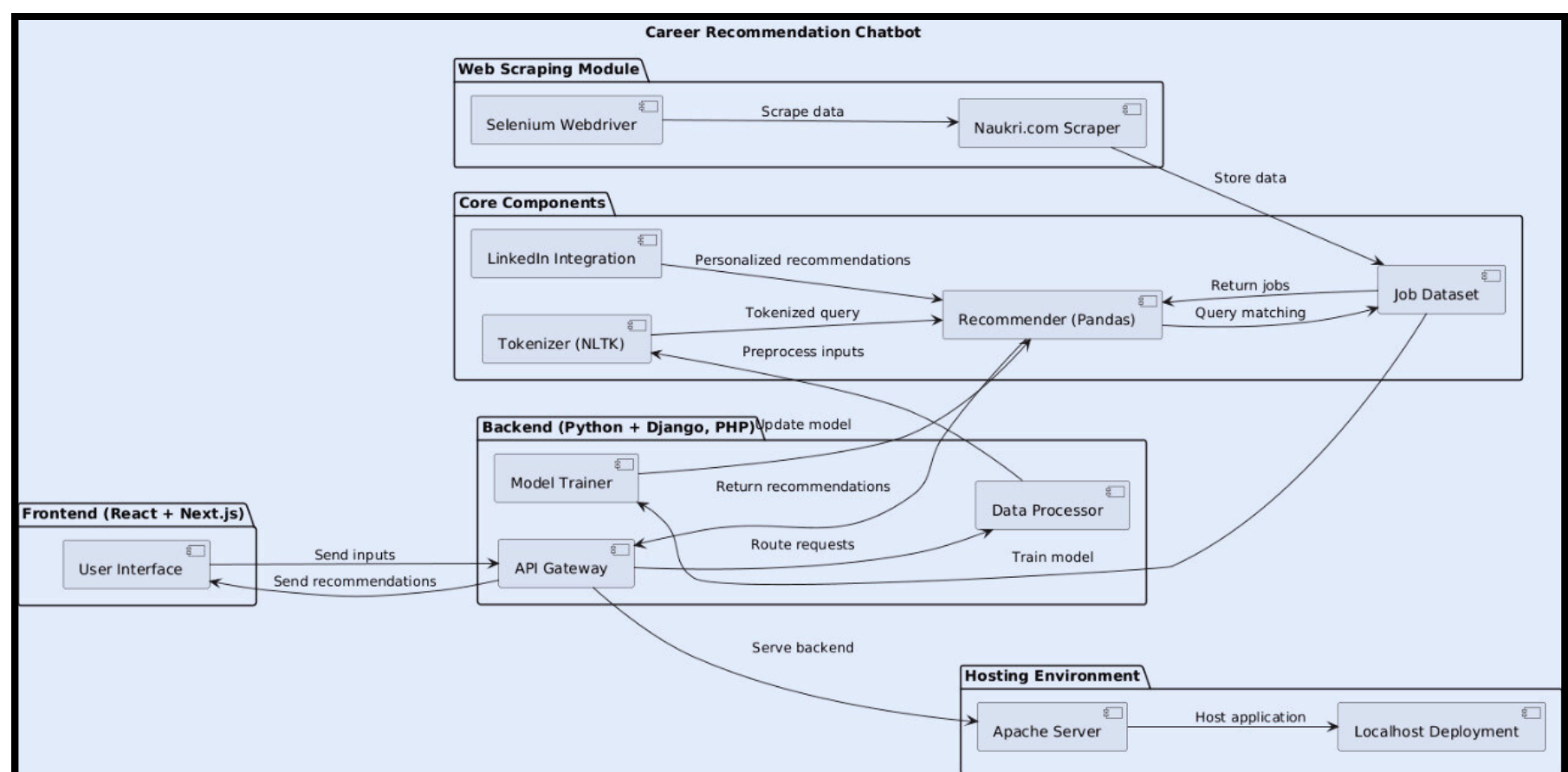
Dept: CSBS, **Sem:** V
Supervisor: Bipasha Mahato

METHODOLOGY

- The chatbot uses a sequence-to-sequence model with LSTM layers for natural language understanding and generation.
- The chatbot is trained on question-answer pairs and evaluated using test datasets and real user interactions.
- The chatbot is designed to understand and respond to user queries and requests.
- he chatbot consists of the following components:
 - Input module: Collects user queries and requests.
 - NLP module: Processes and understands natural language inputs.
 - Dialogue management: Generates appropriate responses and maintains context.
 - Career guidance module: Provides personalized recommendations based on user preferences and career profiles.
 - Student-teacher communication module: Enables seamless interactions between students and teachers for academic support.
- The chatbot uses the following components and tools:
 - TensorFlow and Keras for building and training the neural network model.
 - Natural language processing libraries for text preprocessing and understanding.
 - Chatbot interface for user interactions and feedback collection.

ANALYSIS

- THE CHATBOT IS IMPLEMENTED USING THE FOLLOWING STEPS:
 - DATA PREPROCESSING: TOKENIZATION, SEQUENCE CONVERSION, AND PADDING OF INPUT DATA.
 - MODEL DEVELOPMENT: BUILDING A SEQUENCE-TO-SEQUENCE MODEL USING TENSORFLOW AND KERAS.
 - TRAINING: TRAINING THE MODEL ON EDUCATIONAL DATASETS AND FINE-TUNING FOR CAREER GUIDANCE AND STUDENT-TEACHER COMMUNICATION.
 - INTEGRATION: INTEGRATING THE TRAINED MODEL WITH A CHAT INTERFACE FOR USER INTERACTIONS.
 - TESTING AND REFINEMENT: TESTING THE CHATBOT WITH REAL USERS AND REFINING ITS RESPONSES BASED ON FEEDBACK.



A SIMPLE PROTOTYPE AND TESTING

```
jayabrota_vm@JAYABROTA: /mnt/c/Users/jbtff/OneDrive/Documents$ python3 chatbot3.py
Enter the number of rows to use for training (max 27818): 5000
Model Accuracy: 57.00%
Provide your career details to get a recommendation:
Do you have any professional experience? (yes/no): yes
Enter the skills used in this experience (e.g., 'Java, Project Management') (or type 'none' to skip): SQL, Database Administration
Enter the role (e.g., 'IT Associate') (or type 'none' to skip): Database Admin
Enter the years of experience (e.g., '2 years') (or type 'none' to skip): 2 years
Do you want to add another experience? (yes/no): yes
Enter the skills used in this experience (e.g., 'Java, Project Management') (or type 'none' to skip): Python, Machine Learning
Enter the role (e.g., 'IT Associate') (or type 'none' to skip): AI Engineer
Enter the years of experience (e.g., '2 years') (or type 'none' to skip): 2 years
Do you want to add another experience? (yes/no): no
Enter your current career (e.g., 'AIML Engineer') (or type 'none' if not applicable): AI Engineer
Enter your current pay (e.g., '5,00,000 PA.') (or type 'none' if not applicable): 10,00,000
Enter the career you're seeking (e.g., 'Data Scientist') (default: 'any'): Product Manager
Enter your preferred industry (e.g., 'IT-Software') (default: 'any'): IT-Services
Enter your desired salary (e.g., '7,00,000 PA.') (default: 'any'): any
Recommended Career: Technical Support Engineer
```

```
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Do you want to add another experience? (yes/no): no
Enter your current career (e.g., 'AIML Engineer') (or type 'none' if not applicable): none
Enter your current pay (e.g., '5,00,000 PA.') (or type 'none' if not applicable): none
Enter the career you're seeking (e.g., 'Data Scientist') (default: 'any'): Product Manager
Enter your preferred industry (e.g., 'IT-Software') (default: 'any'): IT-Services
Enter your desired salary (e.g., '7,00,000 PA.') (default: 'any'): any
Recommended Career: Software Developer
jayabrota_vm@JAYABROTA: /mnt/c/Users/jbtff/OneDrive/Documents$ |
```

```
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Enter your preferred industry (e.g., 'IT-Software') (default: 'any'): IT-Services
Enter your desired salary (e.g., '7,00,000 PA.') (default: 'any'): any
Recommended Career: Project Manager-IT/Software
```