

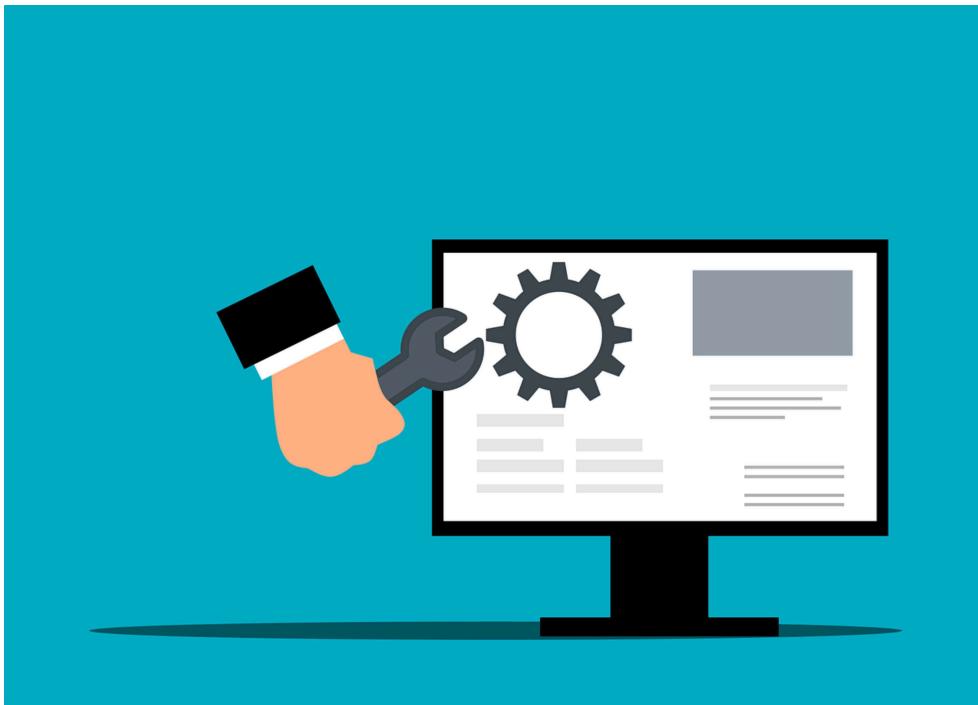
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:≡ Course Content

Problem Statement - Support Ticket Categorization

Submission type	:	File Upload
Due Date	:	Mar 09, 7:30 AM EST
Total Marks	:	60
Available from	:	Feb 21, 9:30 PM

Description



Business Context

In today's dynamic business landscape, organizations are increasingly recognizing the pivotal role customer feedback plays in shaping the trajectory of their products and services. The ability to swiftly and **effectively respond to customer** input not only fosters enhanced customer experiences but also serves as a catalyst for growth, prolonged customer engagement, and the nurturing of lifetime value relationships.

As a dedicated Product Manager or Product Analyst, staying attuned to the voice of your customers is not just a best practice; it's a strategic imperative.

While your organization may be inundated with a wealth of customer-generated feedback and support tickets, your role entails much more than just processing these inputs. To make your efforts in managing customer experience and expectations truly impactful, you need a structured approach – a method that allows you to discern the most pressing issues, set priorities, and allocate resources judiciously.

One of the most effective strategies at your disposal as an organization is to harness the power of automated Support Ticket Categorization - **done in the modern day using Large Language Models and Generative AI.**

Objective

Develop a Generative AI application using a Large Language Model to automate the classification and processing of support tickets. **The application will aim to predict ticket categories, assign priority, suggest estimated resolution times, and store the results in a structured DataFrame.**

Best Practices for Notebook

- The notebook should be well-documented, with inline comments explaining the functionality of code and markdown cells containing comments on the observations and insights
- The notebook should be run from start to finish sequentially before submission
- It is preferable to remove all warnings and errors before submission
- The notebook should be submitted as an HTML file (.html) and NOT as a notebook file (.ipynb)
- Please set the runtime to T4-GPU in Google Colab. Please follow the below instructions to the runtime to T4-GPU
 - Click on "Runtime" in the menu bar
 - Select "Change runtime type" from the dropdown menu
 - In the "Hardware accelerator" section, choose "GPU"
 - You may see multiple GPU options; choose "GPU" if you specifically want a T4 GPU
 - After selecting the GPU option, click on the "SAVE" button

Submission Guidelines

1. The submission should be a well-commented Python notebook [format - HTML]
2. Any assignment found copied/plagiarized with other submissions will not be graded and awarded zero marks

3. Please ensure timely submission as any submission post-deadline will not be accepted for evaluation
4. Your submission will not be evaluated if:
 1. it is submitted post-deadline, or,
 2. more than 1 file is submitted

Power Ahead!

Scoring guide (Rubric) - Support Ticket Categorization - Project Rubric ^

Criteria	Points
Data Overview	
- Load the dataset - Print the overview of the data (first few rows, shape, etc)	2
Model building	
- Load the model from Hugging Face - Create a function to define the model parameters and generate a response	4
Task 1 - Ticket Categorization	
- Define the instruction for the task - Apply the generate response function to get an output from the model - Create a DataFrame containing the necessary fields from the model's output in a structured manner	7
Task 2 - Ticket Categorization and Returning Structured Output	
- Define the instruction for the task - Apply the generate response function to get an output from the model - Create a DataFrame containing the necessary fields from the model's output in a structured manner	7
Task 3 - Ticket Categorization, Creating Tags, and Returning Structured Output	
	7

Criteria	Points
<ul style="list-style-type: none"> - Define the instruction for the task - Apply the generate response function to get an output from the model - Create a DataFrame containing the necessary fields from the model's output in a structured manner 	
Task 4 - Ticket Categorization, Creating Tags, Assigning Priority, and Returning Structured Output	
<ul style="list-style-type: none"> - Define the instruction for the task - Apply the generate response function to get an output from the model - Create a DataFrame containing the necessary fields from the model's output in a structured manner 	7
Task 5 - Ticket Categorization, Creating Tags, Assigning Priority, Assigning ETA, and Returning Structured Output	
<ul style="list-style-type: none"> - Define the instruction for the task - Apply the generate response function to get an output from the model - Create a DataFrame containing the necessary fields from the model's output in a structured manner 	7
Task 6 - Ticket Categorization, Creating Tags, Assigning Priority, Assigning ETA, Creating a Draft Response, and Returning Structured Output	
<ul style="list-style-type: none"> - Define the instruction for the task - Apply the generate response function to get an output from the model - Create a DataFrame containing the necessary fields from the model's output in a structured manner 	7
Model Output Analysis	
<ul style="list-style-type: none"> - Univariate analysis of the columns in the final structured dataframe obtained from the model's output 	4
Actionable Insights and Recommendations	4
<ul style="list-style-type: none"> - Share your observations and insights from this exercise, and your recommendations for a business looking to adopt a 	

Criteria	Points
solution such as this	
Notebook Overall Quality	
- Structure and flow - Well-commented code	4
	Points 60

Submit Assignment

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Submit Assignment

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