

Module 8 - Portfolio Project - Option 2

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After going through several iterations of chatterbot chatbots, I decided to move forward using a HuggingFace transformer-based chatbot. I used the “microsoft/DialoGPT-medium” pre-trained model, with tokenizer and model objects from the HuggingFace transformers package (🧡 *Transformers*, n.d.). Transformers is licensed under the Apache License 2.0, allowing modification, distribution, and commercial use. The microsoft/DialoGPT-medium pre-trained model is released under the MIT license, allowing modification, distribution, and commercial use (*Microsoft/DialoGPT-Medium · Hugging Face*, n.d.; *The MIT License | Open Source Initiative*, n.d.). PyTorch is released under a BSD-like license, allowing commercial use (PyTorch Team, n.d.). The Google Text-To-Speech package is also released under the MIT license (*GTTS — GTTS Documentation*, n.d.). Finally, the playsound package is released under the MIT license (*Playsound · PyPI*, n.d.).

Given that it may be difficult to install all of the requirements, I did include a requirements.txt file in the project. Also, because there are variations in sound and microphones by computer type, I created a screencast of my interaction with the script, available here: <https://www.screencast.com/t/zHXTc7fUDRq>.

Running the chatbot should involve running “pip -r requirements.txt”, and then running “python3 CSC525_PortfolioProject_Option2_Edwards_David.py.” Assuming the code runs on a system with a working microphone and sound card/speakers or headphones, the chatbot will begin listening after adjusting for ambient noise. Then it will run indefinitely until the user speaks the word “exit.”

References

😊 *Transformers*. (n.d.). Retrieved September 11, 2022, from

<https://huggingface.co/docs/transformers/index>

GTTS — gTTS documentation. (n.d.). Retrieved September 11, 2022, from

<https://gtts.readthedocs.io/en/latest/>

Microsoft/DialoGPT-medium · Hugging Face. (n.d.). Retrieved September 11, 2022, from

<https://huggingface.co/microsoft/DialoGPT-medium>

Playsound · PyPI. (n.d.). Retrieved September 11, 2022, from

<https://pypi.org/project/playsound/>

PyTorch Team. (n.d.). *torch: Tensors and Dynamic neural networks in Python with strong*

GPU acceleration (1.12.1) [C++, Python]. Retrieved September 11, 2022, from

<https://pytorch.org/>

The MIT License | Open Source Initiative. (n.d.). Retrieved September 11, 2022, from

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