

# Introduction to Hugging Face



Leveraging Transformer Models for Natural Language Processing

By: Nicholas Bartlett

# Introduction



# What is Natural Language Processing (NLP)?

## Applications of Natural Language Processing



# What are Transformer Models?

What are Transformer Models?

Impact on NLP

Notable Examples

- BERT (Bidirectional Encoder Representations from Transformers): Used for tasks like question answering, named entity recognition, and more.
- GPT-3 & GPT-4 (Generative Pretrained Transformer): Used for text generation tasks, capable of creating human-like text..



# Example of GPT Letter



Write a letter of recommendation for [REDACTED] to the Quantitative Methods Certificate graduate program at UNC Charlotte. Highlight [REDACTED] dedication to complete EDD at NC State, her desire to do more research as indicated by her role as a Postsecondary CTE Research Fellow, and how the program will provide her skills to be successful in future career endeavors. Address the letter to the Quantitative Methods Admissions Committee. Sign the letter [REDACTED]

Quantitative Methods Admissions Committee UNC Charlotte [Address] [City, State, ZIP]

Subject: Letter of Recommendation for Jennifer XZY

Dear Members of the Quantitative Methods Admissions Committee,

I am writing this letter to highly recommend Jennifer XZY for admission to the Quantitative Methods Certificate graduate program at UNC Charlotte. Having known Jennifer for the past few years, I can confidently say that she possesses the qualities and dedication required to excel in this program.

Jennifer has demonstrated an unwavering commitment to her academic pursuits, as evidenced by her ongoing pursuit of her Doctor of Education (Ed.D.) at NC State University. Throughout her doctoral studies, Jennifer exhibited remarkable perseverance and a strong work ethic. She consistently tackled complex research projects and exhibited exceptional analytical skills in her approach to solving problems. Jennifer's ability to think critically and logically will undoubtedly be an asset in the quantitative methods program at UNC Charlotte.

Beyond her academic accomplishments, Jennifer has shown a deep passion for research. As a Postsecondary CTE (Career and Technical Education) Research Fellow, she has engaged in rigorous research activities aimed at advancing knowledge in her field. Her role as a fellow has allowed her to work closely with faculty members and gain valuable experience in data analysis, interpretation, and presentation. Jennifer's desire to delve further into research demonstrates her eagerness to contribute to the field of education and make a meaningful impact.

I firmly believe that the Quantitative Methods Certificate program at UNC Charlotte will provide Jennifer with the necessary skills and knowledge to thrive in her future career endeavors. The program's comprehensive curriculum, encompassing advanced statistical analysis, research design, and data visualization, aligns perfectly with Jennifer's academic background and research interests. By equipping herself with a deeper understanding of quantitative methods, Jennifer will be well-prepared to tackle complex research questions and make evidence-based decisions in her field.

In conclusion, I wholeheartedly endorse Jennifer XZY's application to the Quantitative Methods Certificate program at UNC Charlotte. Her dedication, passion for research, and commitment to academic excellence make her an exceptional candidate. I have no doubt that she will contribute significantly to the program and excel in her studies. If you require any further information, please do not hesitate to contact me.

Thank you for considering Jennifer's application. I have the utmost confidence in her abilities and potential.

Sincerely,

# Introduction to Hugging Face

## What is Hugging Face?

- An AI research company with a strong focus on Natural Language Processing.

## Mission

- To democratize AI and NLPs, making cutting-edge models and research accessible to all.

## Community

- Over 5,000 contributors and millions of users worldwide.



# Hugging Face's Transformer Library



## What is the Transformers Library?

An open-source library developed by Hugging Face for Natural Language Processing. Provides thousands of pre-trained models for various NLP tasks. Offers a user-friendly API and comprehensive documentation.

## Wide Model Support

Supports a wide range of Transformer models such as BERT, GPT-3, GPT-4, T5, RoBERTa, and many more. These models can be used for tasks like text classification, named entity recognition, translation, summarization, etc.

## User-Friendly API

Designed to be easy to use and accessible, even for those new to NLP. Allows users to quickly and easily load models, perform tasks, and get results.

## Why is it a Go-To Library in the NLP Community?

Offers state-of-the-art models that deliver top performance on various NLP tasks.

Facilitates easy sharing and collaboration through the Model Hub.

Actively maintained and updated with new models and features. Backed by a vibrant community of contributors.

# Real-World Applications of Hugging Face

Becoming the GitHub of ML

Impacting AI Industry



# Hugging Face's Model Hub/DEMO

What is the Model Hub?



**The AI community  
building the future.**

Build, train and deploy state of the art models powered by  
the reference open source in machine learning.

Star 105,370

[Hugging Face – The AI community building the future.](#)

# Navigating the Model Hub



with Lysandre



# Benefits of Using Hugging Face



# Resources and Further Reading

Read: [About Hugging Face](#)

Video: [Getting Started With Hugging Face in 15 Minutes](#)

Read: [What are Hugging Face Transformers?](#)

Read: [How you should—and shouldn't—use ChatGPT as a student](#)



# Q&A

Any Questions?



Stay connected! [nickb567@icloud.com](mailto:nickb567@icloud.com)