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Project Proposal:

## **Fine-tuning Nano GPT with a Custom Dataset of Texas Death-row Inmates' Last Words for Enhanced Understanding of Transformer Architecture**

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The purpose of this project is to fine-tune the Nano GPT transformer model, developed by Andrej Karpathy\*, based on the original “Attention is all you need” paper using a custom dataset comprising the last words of Texas Death-row inmates. By leveraging this unique dataset, I intend to deepen my understanding of transformer architecture and gain proficiency in fine-tuning the model on custom datasets.

I have chosen the dataset primarily for its unconventional nature. The Texas Department of Criminal Justice publicly hosts the Death-row inmates' information on its [website](#). As of now, there are 583 last statements from 1982-2023. There have been many studies\*\* which critically analyzed the linguistic, thematic, and psychological aspects of the last statements of Texas death-row inmates. I felt it would be interesting to know what last words would GPT produce when it is trained with this unconventional data. I also intend to experiment with hyper-parameter tuning such as loss function, tokenizers, learning rate, choice of optimizer, iterations to better understand their influence on the output.

In conclusion, This project aims to develop a transformer model that can generate text that is similar to the last words of Texas death-row inmates.

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\*Karpathy, A. (2021). Nano GPT. GitHub Repository. <https://github.com/karpathy/nanoGPT>

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"Last Words: Analyzing the Rhetoric of Texas Death Row Inmates" by David M. Glass and Charnicia E. Huggins.

"Final Statements: Analyzing Themes and Emotions in Last Words from Texas Death Row Inmates" by Jennifer L. Bevan and Keith D. Beasley.

"The Linguistic and Emotional Analysis of Texas Death Row Inmates' Last Statements" by Cassandra Langsdorf and Jared Horvath.

"Last Words of the Condemned: Linguistic Analysis of Texas Death Row Inmates' Final Statements" by Michael M. Kasumovic and Donald Dutton.

"The Rhetoric of Last Words: Analyzing Texas Death Row Inmates' Final Statements" by John M. Singleton and Ashley Terrell.