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Independent Study Mentorship 3A

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<div align="center">Applications of Natural Language Processing</div>

<div align="center">Assessment 11 - Research Assessment</div>

**Date:** 6 January 2020

**Subject:** Commercial Applications of Natural Language Processing

**Works Cited:**

Church, Kenneth W. "Commercial Applications of Natural Language Processing." *Advances in Traditional AI*, edited by Lisa F Rau, 11th ed., vol. 38, Communications of the ACM, 1995, pp. 71–79.

**Assessment:**

While the impact and potential for natural language processing are incredibly large, there are various limiting factors in regards to data and computational resources for students that inhibit the type of innovation that can be done. In order to overcome these barriers, it is important to look at practical applications of the past and build new innovative products as a result of using these applications. Through this, any natural language processing projects become increasingly more feasible while also enabling the research process to become less time-consuming because of the vast amount of resources already available for many of these technologies. In doing this, the brainstorming process of a new product becomes infinitely easier because of the large amount of inspiration available.

To start, it is important to look at potential sources of extensibility on prior natural language processing based projects by looking at challenges prior generations of machine

learning engineers have faced. Through doing this, it was found that older tools can significantly be improved with newer natural language processing techniques. For instance, modern technologies like typing analysis algorithms can be used in parallel with spell checkers to ensure the spell checker is as accurate as possible. This also calls into question how the original work can be extended or improved based on ideas such as multilingualism or localization that corporations use to make their products universal because, in that sense, the product would then be able to reach a broader audience and impact the world in a more profound way. This also is something important that should be kept in mind when creating a new product that is meant for commercial use because if it can reach a greater audience then it will likely be more successful in the markets.

Beyond the commercialization aspect of natural language processing applications, it is important to remember the fundamental and primary applications of natural language processing technology: categorization, generation, retrieval, and extraction. Through remembering these commonly used applications, the brainstorming process for a new product will become immensely easier and more streamlined. Additionally, using these topics in parallel with day to day tasks like organizing files on a computer, there comes a whole new generation of productivity applications that have never been developed before. Through this, not only will these products will be innovative but the impact they have on society will be broad. This serves to be beneficial because it draws parallels between my mission of fundamentally changing the way people work in a day to day environment while creating noteworthy software that can be used by millions.

Reflecting for the future, it will be important to synthesize these concepts into actual ideas that can be developed. It is also important to note that many of the ideas presented like

spell checkers or grammar correctors have already been developed or have been refined to near

perfection. However, what is more important is to use these already existing technologies in

order to create the next level of applications. Going forward, this research has served to be

invaluable both within the brainstorming process as well as allowing critical thinking to occur in

order to really push my brain's limit on what can be done with limited resources and technology,

something that will serve to be instrumental in the final product development process.

**Annotations**