

Date: 04/10/2020

To: Professor Kathryn Roosa

From: Thi Huynh – thi.huynh@austincc.edu

Subject of my paper: Application of chatbots in mental healthcare for college students.

Writer's Background: I am a Computer Science major with a background of Linguistics, and I want to pursue Natural Language Processing – the subfield of those two areas that concerns the interactions between computers and human languages. The applications of Natural Language Processing can be seen in chatbots and virtual voice assistants, which not only provide help in business but also play a vital role in mental healthcare. I aspire to strengthen my knowledge of this technology and apply it into constructing a more accessible and effective mental healthcare system for college students.

The Needs for Chatbots in College Mental Healthcare: With the lockdown going on throughout the U.S. comes the increase in the need for mental healthcare, especially in colleges and universities. During normal time, each college or university has mental health counselors who schedule sessions with students on a first-come-first-serve basis or based on levels of emergency. However, during this time of crisis, there seems to be a shortage of help available, and chatbots can provide great assistance for the system. The modal can also be utilized after the pandemic is over. My research question is, “How to apply chatbots in mental healthcare system of colleges and universities?”

Intended Audience: My paper is intended to universities and colleges administrators, academic departments and student services that not only concern about their students' academic performance but also care about their well-being both physically and mentally.

Approach to the Paper: In my paper, I will first introduce chatbot and the technology of Natural Language Processing behind it. Next, I will discuss the urgent needs for mental healthcare in colleges and universities, then emphasize the benefits of chatbot of meeting this demand. I will then provide examples of some chatbots already in used for mental health assistance and compare their strengths and weaknesses. I will conclude my paper with the potential future of applying chatbots in caring for college students' mental health and the cost for this application.

Graphs and Charts: For my paper, I may use charts that show the demand and availability of mental health care in U.S. colleges and universities to emphasize the imbalance between the two. I might also use graph which demonstrates the efficiency of chatbots in assisting mental healthcare system and shows the predicted future trends.

Sources of Information: My two main sources of information are articles from psychology magazine and scientific papers from reliable databases. The magazine articles will provide general views of the demand and usage of chatbots in mental healthcare system, while the thoroughly researched papers will provide technical knowledge and credible statistics to support my arguments.

Tentative List of References:

American College Health Association. American College Health. "Association-National College Health Assessment II: Undergraduate Student. Executive Summary Spring 2019." Silver Spring, MD: American College, Health Association, 2019.

Brown, Sally. "Meet the Chatbots Doing Your Job." *Therapy Today*, vol. 29, no. 5, June 2018, pp. 8–11.

Gates, Vael. "Natural Language Processing for Psychotherapy." *Berkeley Science Review*, Mar. 27, 2019, berkeleysciencereview.com/2019/03/nlp-for-psychotherapy/?fbclid=IwAR0E4GQvYgdihHh1RwXR8M1EKL9MAgc_iLk4iJwNKPpW_izpRQpw5mJQcbc

Holt, Karyn E., et al. "Trends and Issues for Mental Health in Online Educational Environments." *Journal of Behavioral & Social Sciences*, vol. 6, no. 3, Fall 2019, pp. 127–132

John, Arit. "Increased Anxiety and Depression Top College Students' Concerns in Coronavirus Survey." *Los Angeles Times*, Mar. 25, 2020. www.latimes.com/california/story/2020-03-25/college-students-anxiety-depression-coronavirus-survey

Joseph, Saumya. "Depression, Anxiety Rising among U.S. College Students." *Reuters*, Aug. 29, 2019. www.reuters.com/article/us-health-mental-undergrads/depression-anxiety-rising-among-us-college-students-idUSKCN1VJ25Z

Knight, Will. "Andrew Ng Has a Chatbot That Can Help with Depression." *MIT Technology Review*, vol. 121, no. 1, Jan. 2018, p. 15.

Legg, Timothy. "Do Mental Health Chatbots Work?" *Healthline*, Jul.6, 2018, www.healthline.com/health/mental-health/chatbots-reviews?fbclid=IwAR1VxaSZCBWg7We2E2g6eOrlXyWilW0rGpFjXDB1AHgjKLPXhwZjP60ZB64#1

Price, Stephanie. "New Chatbot Therapist to Help Combat Depression Unveiled." *Health Europa*, 26 Sep. 2019, www.healtheuropa.eu/chatbot-therapist-to-combat-depression-un/93609/?fbclid=IwAR1zR0NSU9-g5M1zEv6Db0arzEcPLT1fyMu2ZYRY_4K3LczphRjaXGplqIQ

Vaidyam, Aditya, and John Torous. "DIGITAL PSYCHIATRY. Chatbots: What Are They and Why Care?" *Psychiatric Times*, vol. 36, no. 6, June 2019, p. 21.

Tentative Schedule for completion.

Receive approval for topic:	4/12
Begin research:	4/13
Complete research:	4/16
Locate graphics:	4/17
Complete first draft:	4/26
Edit/Revise draft:	4/27
Submit to online tutor:	4/30
Final revisions:	5/1
Submit for grading:	5/3

Conclusion: My research will analyze the needs for mental healthcare among U.S. college students, introduce the Natural Language Processing technology under the form of chatbots and emphasize the benefits of using chatbots in constructing an accessible and efficient mental healthcare system for colleges and universities, both during the time of crisis and under normal circumstances. Not only does this research help strengthen my knowledge in the field, it will also contribute to any intuition's mission of enhancing the overall well-being of its students. It would be a great pleasure to be granted the permission to complete this research.