

Empowering Financial Peace through Chatbot Guidance

Prof. Vijaykumar S¹, Shriya R², Vibha M³

Department of Information Science and Engineering^{1,2,3}

Global Academy of Technology, Bangalore, Karnataka, India

Abstract: Real-time conversations with humans can be held by intelligent chatbots, utilized by businesses to enhance customer service and streamline operations. A gap is perceived in existing chatbots' achievement of human-like conversational abilities, despite their widespread acceptance and implementation across various sectors. This research paper discusses the development of a unique chatbot providing not only financial guidance but also emotional support, thus sparking a blend of technological innovation and human connection. Emotional states of users are deciphered by the chatbot, using natural language processing (NLP) and sentiment analysis. Tailored responses are generated, offering practical financial advice as well as emotional support during times of stress. Aiming to empower users in managing their financial challenges with serenity, the chatbot integrates emotional support, financial education, goal setting and planning, stress management, and continuous support and monitoring. Cutting-edge technologies, including the Python programming language and NLP libraries like spaCy and NLTK, are incorporated in the project. It interfaces with external financial APIs to provide real-time data enabling informed decision-making. Our chatbot's focus lies in providing a secure and positive environment for users to share financial worries, with the unique ability to comprehend and respond to financial inquiries and emotional nuances in users' messages. By documenting the creation of this chatbot, a contribution is made to the expanding field of emotional intelligence in artificial intelligence applications. The expected outcomes of this research project include an enhanced sense of financial well-being for users, bridging the gap between technological solutions and human-centered support

Keywords: Natural Language Processing(NLP),Financial Chatbot, Sentiment Analysis, Virtual Companion, Financial Assistance.

REFERENCES

- [1] Vitaliy M. Kobets, Kyrlyo H. Kozlovskiy. "Application of chat bots for personalized financial advice" 2022; Vol. 5 No. 3: 229–242 DOI: <https://doi.org/10.15276/hait.05.2022.18>.
- [2] SumayyaAbubakar, IdrisRabiu, Amit Mishra, Ismaila Musa. "Emotionally intelligent chatbots-designing for empathy and emotional support: A review" Journal of Advances in Science and Engineering 8 (2023) 83 – 93 <https://doi.org/10.37121/jase.v8i2.227>.
- [3] VennySitiFebriyanny, TatiHarihayati. "PERSONAL FINANCIAL MANAGEMENT USING CHATBOT (CASE STUDY ON UNIKOM STUDENTS)" TeknikInformatika – UniversitasKomputer Indonesia.
- [4] Tushar Sharma, JitendraParihar, Saurabh Singh. "Intelligent Chatbot for Prediction and Management of Stress" (2021) 11th International Conference on Cloud Computing, Data Science & Engineering, 10.1109/Confluence51648.2021.9377091.
- [5] PranavKapoor, PrathamAgarwal, Zeeshan Ahmad. "Therapy Chatbot: A Relief From Mental Stress And Problems" May 2021 DOI:10.14299/ijser.2021.05.08.
- [6] PrissadangSuta, Xi Lan, Biting Wu, PornchaiMongkolnam and Jonathan H. Chan. "An Overview of Machine Learning in Chatbots" International Journal of Mechanical Engineering and Robotics Research Vol. 9, No. 4, April 2020.

- [7] Mohammad Ridha and KhansaHauraMaharan. "Implementation of Artificial Intelligence Chatbot in Optimizing Customer Service in Financial Technology Company PT. FinAccel Finance Indonesia" <https://doi.org/10.3390/proceedings2022083021> <https://www.mdpi.com/journal/Proceedings> 2022, 83, 21 2 of 9
- [8] TarunLalwani, ShashankBhalotia, Ashish Pal, ShreyaBisen, VasundharaRathod. "Implementation of a Chatbot System using AI and NLP" International Journal of Innovative Research in Computer Science & Technology (IJIRCST) ISSN: 2347-5552, Volume-6, Issue-3, May 2018 DOI: 10.21276/ijirest.2018.6.3.2
- [9] ShivomAgarwal, ShouryaMehra, PrithaMitra. "Multi-Purpose NLP Chatbot : Design, Methodology & Conclusion" (2019)
- [10] Yi Cao and JiaZhai. "Bridging the gap – the impact of ChatGPT on financial research" , Journal of Chinese Economic and Business Studies, <https://doi.org/10.1080/14765284.2023.2212434>
- [11] A. Thodge, H. M and C. P. D. Cyril, "Web-based chatbot for basic financial and mortgage services," 2023 2nd International Conference on Vision Towards Emerging Trends in Communication and Networking Technologies (ViTECoN), Vellore, India, 2023, pp. 1-5, doi: 10.1109/ViTECoN58111.2023.10157424
- [12] Takuma Okuda and SanaeShoda, AI-based chatbot Service for Financial Industry, April 2021, [online] <https://www.fujitsu.com/globaldocuments/about/resources/publications/fstj/archives/vo154-2/paper01.pdf>
- [13] Sewoong Hwang and Jonghyuk Kim, "Toward a chatbot for financial sustainability", Sustainability, vol. 13, no. 6, pp. 3173, 2021.
- [14] OnuohaChibuike and Nwokonkwo Obi, Implementation of a Web-based chatbot assisted services for results information system, September 2022, [online] Available: [Implementationofawebasedchatboard.pdf](#).
- [15] Hana DemmaWube, SintayehuZekariasEsubalew, FiresewFayisoWeldesellase and TayeGirmaDebelee, Text-Based Chatbot in Financial Sector: A Systematic Literature Review, July 2022.
- [16] .Moonkyoung Jang, Yoonhyuk Jung and Seongcheol Kim, Investigating managers' understanding of chatbots in the Korean financial industry, February 2021, <https://http://www.elsevier.com/locate/comphumbeh>.
- [17] EleniAdamopoulou and LefterisMoussiades, An overview of Chatbot Technology, August 2021.
- [18] R Epstein, G Roberts and G Beber, Parsing the Turing Test: Philosophical and Methodological Issues in the Quest for the Thinking Computer., The Anatomy of A. L. I. C. E. I SpringerLink, November 2007.
- [19] DivyaMadhu, C. J Neeraj Jain, ElmySebastain, ShinoyShaji and AnandhuAjayakumar, "A Novel Approach for Medical Assistance Using Trained Chatbot", International Conference on Inventive Communication and Computational Technologies (ICICCT 2017), 2017.
- [20] D. Zumstein and S Hundertmark, Chatbots an interactive technology for personalized communication transactions and services, August 2017.