DIKWP Artificial Consciousness: Theory and Method from Physiology to Mathematical Physics, and Application in Medicine, Meteorology, and other fields

Yucong Duan

DIKWP-AC Artificial Consciousness Lab,

AGI-AIGC-GPT Assessment DIKWP (Global) Lab,

College of Computer Science and Technology, Hainan University, Haikou, Hainan, 570228, P.R.China

Abstract: The DIKWP artificial consciousness model describes the process of transforming data into wisdom, each step guided by our purpose or intent. This model encompasses key concepts such as Data, Information, Knowledge, Wisdom, and Purpose. Our brains play a vital role in this process: deciphering and processing raw data, understanding and integrating information, generating and applying knowledge, and forming and executing intent, ultimately realizing wisdom. The brain's role within the DIKWP model is manifold. For instance, in weather prediction, we first collect weather data such as temperature, humidity, and wind speed (Data stage). We extract useful information from this data, identifying climatic patterns and seasonal changes (Information stage). Based on this information, we build a weather prediction model (Knowledge stage). Subsequently, we reason and make decisions based on this knowledge, generating weather forecasts (Wisdom stage). Finally, our forecasts and decisions are guided by our predictive goals (Purpose stage). In essence, the human brain plays a crucial role in processing and understanding information, generating knowledge, forming wisdom, and guiding intentional actions. The DIKWP model scientifically and systematically reflects the mechanism of how the human brain processes information, generates knowledge, forms wisdom, and guides behavior. Future research can further explore this model's applications to help us understand more profoundly the workings of the human brain and cognitive processes.

Bio: Dr. Yucong Duan is a full professor at Hainan University, renowned South China Sea scholar, and leading talent. He currently serves as a member of the Academic Committee of the School of Computer Science at Hainan University, founder of the DIKWP-AC Artificial Consciousness Lab, founder of the AGI-AIGC-GPT Assessment DIKWP (Global) Lab, head of the DIKWP innovation team focusing on data, information, knowledge, wisdom, and intention, editor of the Journal of Hainan University (Natural Science Edition), Distinguished Researcher at Chongqing Police College, leader of the "Internet Innovation Team for Data, Information, Knowledge, Technology DIKW Integration" under the "Double Hundred Talent Team" of the Hainan Provincial Committee, Vice President of the Hainan Province Inventors Association, Vice President of the Hainan Province Intellectual Property Association, Vice President of the Hainan Province Low-Carbon Economic Development Promotion Association, Vice President of the Hainan Province Agro-product Processing Enterprises Association, Visiting Researcher at Central Michigan University in the USA, and member of the Doctoral Guidance Committee at the University of Modena in Italy. His main research interests are DIKW, service computing, and artificial intelligence. He was listed among the top 2% of global scientists for lifetime achievements in 2022, and has applied for 241 Chinese and international patents related to the DIKWP series. He was named the Most Beautiful Science and Technology Worker in Hainan Province in 2022 (and was recommended for nomination as the Outstanding Science and Technology Worker in China). He has participated in the development of 2 international standards for IEEE financial knowledge graphs and 4 industry knowledge graph standards.