Mayo Clinic and nference Form Qrativ, AI Platform for Developing Rare Disease Therapies

The Mayo Clinic and nference, a healthcare data synthesis company powered by artificial intelligence (AI), recently announced they’re joining forces to form the startup company Qrativ. This startup will combine nference’s AI knowledge synthesis platform and the Mayo Clinic’s experience and expertise in medicine and healthcare to identify and develop new therapies for patients where an unmet need exists. Orphan diseases have been chosen as the prime focus of Qrativ’s efforts.

AI utilization in healthcare is nothing new — this type of technology has been used for years in health data acquisition and clinical trials. A more sophisticated platform is needed, however, to create better efficiency in drug development. From drug discovery to market approval, the majority of drugs enter a long development cycle that can often span up to 10 years. Even at this point, there are no guarantees that the drug will prove to be a practical treatment option. The use of AI in the study of these therapies is said to improve both the quality of clinical trials as well as the speed at which life-saving therapies are delivered to market.

The role of the Mayo Clinic in this launch is multifaceted, with involvement in all phases of clinical development, including the design and implementation of clinical trial protocols. The Mayo Clinic will bring its intensive knowledge of drug discovery and development, as well as clinical trial expertise, to the table to facilitate the most efficient delivery of medical therapies for patients.

Qrativ will be powered by the Darwin.ai platform. This platform primarily serves two purposes: (1) to discover and in-license compounds that may offer therapeutic value for unmet needs, and (2) to license the Darwin.ai platform to companies (pharmaceutical and biotech) who may be interested in studying compounds that are either shelved or in the current pipeline. According to Murali Aravamudan, co-founder and CEO of Qrativ and nference, “For the in-licensed compounds, Qrativ will bring those assets through phase I or phase II clinical trials and either sell the asset to a larger pharma company or develop the asset through a spin-out/creation of an independent company.”

Combining the forces of physicians, researchers and AI technology is crucial if the healthcare space wishes to evolve to the next level in patient care. “This collaboration is an example of our commitment to swiftly bring effective life-changing therapies to patients,” said Clark Otley, MD, medical director, department of Business Development, at the Mayo Clinic.

A large influx of new data on the mechanics and biology of disease has made AI an important tool for synthesizing this information so researchers can quickly grasp the fundamentals. Hopefully, this will enable more productive workflows in drug development and facilitate the delivery of new therapies to patients with orphan diseases.

Aravamudan believes Qrativ will benefit patient care by maximizing pharmaceutical drugs’ potential for patients with an unmet clinical need. “Our approach is beneficial to everyone involved. It has the potential of benefiting patients who desperately need new treatments, and it also benefits companies by allowing them to maximize the value of their internal drug pipelines,” said Aravamudan. He added, “Also, the value of being part of the Mayo Clinic’s ecosystem gives us access to experts who see patients daily and can truly speak to patient needs.”
In addition to assisting in clinical trial development and implementation, AI has impacted other areas of healthcare that are rarely mentioned. AI is currently being used to improve diagnosis of disease, as well as optimizing patient care in the ER, for example. Few companies, however, are utilizing AI technology to revolutionize the process of drug discovery and development. Aravamudan added, “The predictive spatiotemporal signals incipient from Qrativ’s state-of-the-art neural network ensemble can often be explained in a mechanistic fashion. Such an AI system, augmented with the clinical expertise from Mayo Clinic, is unique to Qrativ.”

Alexandre Nossovskoi, analyst of iGan Partners, also believes the Mayo Clinic will play a unique contribution to this startup: “They have been incredibly active over the last few years in making investments and supporting the growth of new startups in healthcare, from gene therapy to therapeutics and personalized medicine.” He added, “In this case, they are providing proprietary data and in-house medical expertise to help the venture’s AI technology discover new uses for drugs at an early stage of development.”

While some are skeptical of the impact AI will have, many are confident newer technological initiatives will exert a positive effect on improving the care of patients with rare diseases. Nossovskoi explains how he believes the new startup will enhance AI in the healthcare space. According to Nossovskoi, “Increasingly, in-silico testing is becoming more valuable in performing meta-science and in identifying new, previously unseen, relationships, be it in the lab or in research.” He added, “You’re going to see more AI being leveraged to replace what used to be possible only in the real-world setting to eventually make things like true, personalized medicine a reality.”

— Brandon May

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