Genpact Awarded U.S. Patent for its Natural Language Understanding Technology Framework

Breakthrough ability to digitally process natural language helps companies accelerate time-to-value in digital transformation

NEW YORK, June 19, 2018 /PRNewswire/ -- Genpact (NYSE: G), a professional services firm focused on delivering digital transformation, announced today that the United States Patent and Trademark Office (USPTO) has awarded the company a patent for natural language understanding (NLU) that enables its artificial intelligence (AI) applications to understand the meaning of natural language, something not previously possible in the context of solving business problems. The technology is an integral part of the Genpact Cora AI-based platform for digital transformation.

The patent covers Genpact's unique technology method for understanding the meaning of a document using computational linguistics – similar to how a human brain creates and understands meaning – rather than relying on less accurate statistical methods. This approach provides several advantages. First, it enables Genpact's AI applications to process natural language, while retaining the context. Most real-world AI solutions need to be contextual in order to be accurate and generate relevant outcomes. Second, the approach provides complete traceability into its reasoning, therefore avoiding the common "black box" problem in order to help users and system developers understand exactly how the AI system made its decision. Third, Genpact's technology enables AI-based solutions to be developed without requiring as large of a data set as other AI solutions for training, which facilitates faster time-to-value.

"Many natural language processing technologies today are ineffective when it comes to complex business documents because they miss the context and nuance in business language. Our NLU technology gets around this by applying more contextual understanding with a linguistics-based approach, in addition to a statistical approach," **said Sanjay Srivastava, chief digital officer, Genpact.**

Genpact AI solutions integrate deep domain knowledge with unique AI technology and innovative services to accelerate the success of clients' digital transformations. Genpact has multiple use cases in production with clients that apply this patented technology. This includes the extraction of structured and unstructured data and turning that data into actionable knowledge. This is applied in multiple areas to drive transformation, including contract reconciliation with invoices, contact center service ticket analysis and optimization, financial statement aggregation for wealth management, and real-time interpretation of news and other content.

"This patent is another validation of our focus on the next frontier of solving business problems using NLU based on computational linguistics and continuous learning methods without relying on statistical methods," **said Srini Bharadwaj, head of Natural Language Understanding products, Genpact.** "We have made great progress in driving innovation in several fundamental aspects of linguistics such as part of speech tagging and co-reference resolution, which enables us to perform at very high levels of accuracy with a nominal amount of expert assistance."

Genpact holds additional patents, which when combined with this latest NLU patent, drive significant transformation for clients and provide the following benefits:

- **Visualize data continuously** – Other Genpact Cora components, combined with AI engines with a similar abstract architecture, can generate unprecedented speed, flexibility, and knowledge-based AI-led automation in Genpact's software products. This is enabled by a method that allows business analysts to create user

interfaces (UI) purely through metadata without programming, which allows the rapid implementation of a UI in software applications, something not previously possible.

- **Structure data easily** – Genpact can bring structure to unstructured data, found in financial statements, custodian statements, and adverse event (AE) reporting in pharmacovigilance, a critical issue that consumes approximately 70 percent of practitioners' time to aggregate, cleanse, and normalize data in order to complete everyday business functions. This is enabled by a technology that automatically extracts tabular data from unstructured documents. Using linguistically-derived maps, the extracted data is normalized to a standard template. Since the awarding of this patent, Genpact has significantly improved the technology with geometric scaling and linguistic processing of hybrid documents where tabular and non-tabular data co-exist, such as in legal documents.
- **Speed to market** – Genpact has dramatically simplified the implementation of computational intelligence in software applications. Enterprise business processes often require extensive computational expertise, such as pricing or premium computation in insurance. Intelligence simplification for software is enabled by a patented technology which renders the computational intelligence to a meta model and eliminates the need to code it in the software in order to make changes to implementation models without going through the arduous software development lifecycle.
- **Unify AI-led automation –** Genpact Cora combines both architectural and innovations in pure AI methods to provide a holistic platform for AI-led automation. The approach results in shifting the software development process to business analysts, allowing them to better solve client needs. This is enabled by implementing a novel abstract model-driven architecture giving Genpact Cora a great deal of its power, speed, and flexibility. The architecture reduces application development to a modeling exercise and eliminates programming.

About Genpact

Genpact (NYSE: G) is a global professional services firm that makes business transformation real. We drive digital-led innovation and digitally-enabled intelligent operations for our clients, guided by our experience running thousands of processes for hundreds of Global Fortune 500 companies. We think with design, dream in digital, and solve problems with data and analytics. We obsess over operations and focus on the details – all 78,000+ of us. From New York to New Delhi and more than 20 countries in between, Genpact has the end-to-end expertise to connect every dot, reimagine every process, and reinvent companies' ways of working. We know that rethinking each step from start to finish will create better business outcomes. Whatever it is, we'll be there with you – putting data and digital to work to create bold, lasting results – because transformation happens here. Get to know us at Genpact.com and on LinkedIn, Twitter, YouTube, and Facebook.

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