Computable Genomix software package used like Google by gene researchers


Computable Genomix has designed a software package called GeneIndexer that is being touted as the Google of gene research.

The company, founded in 2003 by University of Memphis professor Ramin Homayouni and Michael Berry, a professor at UT-Knoxville, uses GeneIndexer to help interpret genomic data and supplement existing search tools by locating related gene-focused literature.

Homayouni says after he and Berry discussed the concept of the company, Berry enlisted one of his graduate students, Kevin Heinreich, to write the software in 2001. Heinreich says the prototype was completed in 2002 and they have been improving it ever since.

"There is way too much information out there and if you can navigate and reduce millions of documents to a few, the end user can understand and we've got something," Heinreich says. "We think that by doing it this way, you can find things you may not have known you were looking for, but could help your research."

GeneIndexer allows users to type in a typical trait that is controlled by genes. It then performs a search for documents that are relevant to that particular gene, often returning thousands of documents, ordered by relevance. The search engine, which is powered by Latent Semantic Indexing, similar to Google, can also find related terms that may not have been in the keyword search.

"It can find things based on the concepts," Homayouni says. "You have 800 different genes for Alzheimer's and you can narrow that down. There may also be literature out there that deals with what you're looking for. You can find that without having to read hundreds of papers."

Heinreich says Computable Genomix's product can be provided in one of two ways: Clients can either pay for the software or for licensing fees, which are still being worked out. The software can be specialized for a particular project to manage data.

The product is currently being used and tested by collaborators at the University of Memphis and University of Tennessee Health Science Center. Interest has come from genetic research companies and from the National Institutes of Health, which hopes to deploy it in brain research.

"There are over 26,000 genes in the brain and NIH is currently working to map that out," Homayouni says.

Heinreich says the company is also collaborating with technology consulting firm Mercury Technology Labs to help market the product.

"Academics are great at doing the first 75% of product development," Heinreich says. "We take a great idea, find the data and prove it works, but the last 25% is where Mercury comes in to help us offer it to the commercial world. If it wasn't for them, we'd be writing about doing it instead of doing it."

Eric Mathews, a principal with Mercury, sees GeneIndexer as a valuable tool in the research and development of new drugs and antibodies.

"We find the best raw technologies and research talent from research and development labs, both academic and industrial, and create new technology business ventures," Mathews says. "Rapid business prototyping is a critically important component of technological innovation."

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