IBM Scientist Earns National Science Foundation Award For Video Data Visualization

CAMBRIDGE, Mass., March 31, 2017 /PRNewswire/ -- IBM Research (NYSE:IBM) scientist, and manager of IBM's Cognitive Visualization Lab in Cambridge, MA Dr. Mauro Martino has earned a National Science Foundation Vizzie award for his video data visualization Network Earth. The video, published by *Nature*, uses data visualization technology to combine the theoretical physics of resilience patterns in networks, with the real world data of networks in nature – in this case, the mutualism between select species of ants and plants in Australia and New Guinea.

Network Earth: https://www.youtube.com/watch?v=xZ3OmlbtaMU

"In 'Network Earth,' Martino and his team created a film that shows the interconnections between all life on Earth. It was created to accompany a research paper on Earth's resilience, published in *Nature*. While the paper was theoretical, Martino says, the video aims to show that 'math can be poetically expressed visually' and to feel real and tangible to viewers around the world." – National Science Foundation

Martino was inspired to create "Network Earth" after readingUniversal resilience patterns in complex networks in *Nature,* written by Northeastern University professors Drs. Jianxi Gao, Baruch Barzel, and Albert-László Barabási. Their theoretical physics paper details how to calculate what happens when something is added to or removed from any network. To apply it to a real world example, Martino and his team in the Cognitive Visualization Lab gathered information on 41 species of ants, and 50 species of plants in Australia and New Guinea that have symbiotic relationships. They then developed IBM's Network DataAPI, and other custom data visualization code that could apply this natural network to the theoretical physics.

The code married the ability to adjust for the millions of ways this ant-plant network could change to maintain equilibrium over time, due to, for example, temperature change, with animated visuals, such as graphical representations of the earth, ants, plants, and a timeline, all in a storytelling format.

According to Martino, "Network Earth" is the beginning of a data visualization trend where "we will have tools alongside our Network Data API that scientists can use to build short, appealing movies that help everyone makes sense of otherwise dense, technical topics."

Martino and his team also developed theIBM Watson News Explorer, a cognitive application that uses natural language processing to analyze and present large volumes of news articles in an understandable fashion, which earned Kantar's 2016 Information is Beautiful silver medal, and was a 2016 Fast Company DesignInnovation by Design finalist for websites and platforms.

Contact:
Chris Nay
IBM Media Relations - Research
cnay@us.ibm.com
512-286-7727

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