Beat: Technology

CONTEXT FOR EXPLORING The CONDITIONS NECESSARY For LIFE On MARS In The PAST

NEW CROWDSOURCING CHALLENGE

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USPA NEWS - DrivenData, in collaboration with HeroX, have announced their newest crowdsourcing competition on behalf of NASA: Mars Spectrometry, Detect Evidence for Past Habitability. The challenge, which offers a $30,000 prize purse, seeks innovative methods to automatically help analyze and interpret evolved gas analysis-mass spectrometry data related to Mars exploration. This data is from geological samples of scientific interest to better understand the planet's potential signs of past habitability.

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One of the most important planetary science discoveries in recent years is that Mars had environmental conditions that could have been livable in the past. Understanding how these conditions changed is important to understanding Mars' conditions for habitability over time. For these inquiries, several robust and powerful rovers have been sent to Mars to collect rock samples and take measurements that can be used to determine their chemical makeup.

Additionally, thousands of samples have been analyzed in labs on Earth to help scientists understand the context for the data collected on Mars. By taking advantage of the many supporting experimental runs done on comparable rock samples, data science methods can be developed in order to support scientists in their analysis and interpretations of data collected by planetary mission instruments and laboratory instruments. These advancements may also help scientists more quickly and effectively conduct future mission operations.

For this challenge, participants are tasked with building an innovative method to automatically analyze evolved gas analysis (EGA) data of simulated Mars samples collected on both commercial and laboratory instruments analogous to those used for Mars exploration. The best methods should be able to detect the presence of certain families of chemical compounds (specified in the challenge) in the samples. The winning techniques may be used to help future planetary missions such as the ExoMars mission and the Dragonfly mission to Titan.

"This is supporting a fascinating research question where machine learning tools can have a real impact on how we can learn more about our place in the universe," said Greg Lipstein, Principal, DrivenData. "It's a great chance to harness the collective intelligence and passion of the data community to advance the state of open science."

"It's exciting to think there might be clues of past habitable conditions on Mars that these investigations can help to interpret," said Kal K. Sahota, CEO, HeroX. "These challenges are so inspiring as we search for evidence of extraterrestrial life."

The Challenge: The methods should detect the presence of certain families of chemical compounds in data collected from performing EGA-MS on a set of geological material samples.

The Prize: A prize purse of $30K will be shared among four teams.

Eligibility to Compete and Win Prize(s): The prize is open to anyone aged 18 or older participating as an individual or as a team. Individual competitors and teams may originate from any country, as long as United States federal sanctions do not prohibit participation (some restrictions apply). Additional eligibility requirements or limits can be found in the challenge rules.

To accept the challenge, visit https://mars.drivendata.org/

* Photo cover: Competition Calls on Innovators to Analyze Mass Spectrometry Data from Mars to Detect Conditions for Past Life; Total Prize Purse of $30K

Source: DrivenData; HeroX

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