IOMICS Announces Cognitive Computing for Bench Scientists

*Automating chemical, multiomic and pathway-level biomarker development is critical to accelerating precision medicine initiatives worldwide.*

BOSTON (PRWEB) December 31, 2018 -- IOMICS announced the release of its first cloud-deployed analytics service, ASPEN, based on the award-winning FUSION Analytics Platform. ASPEN allows every bench scientist to automatically mine and model complex multiscale datasets to identify molecular signatures of pathogenic processes and disease progression critical to drug development, companion diagnostics, and personalized patient profiling.

“The pace and complexity of biological research is increasing rapidly. For some diseases we have become data rich, yet obtaining actionable information from these complex data sets remains a challenge,” said J. Gormley, consulting CTO and senior software architect at IOMICS. “To maintain progress, and to support the growing number of precision medicine initiatives worldwide, researchers must be willing to embrace new methods and new computational models optimized for chemical and omic data sets. This requires cognitive computing techniques which by definition employ algorithms and data in a smart, adaptive and synergistic way.”

ASPEN is a feature-rich in silico model building and hypothesis discovery service that allows a bench scientist to perform real-time specification-based data staging and predictive model development for a broad range of chemical characterization, biomarker discovery, and drug development initiatives. ASPEN is the only solution that seamlessly combines chemical and molecular data staging, predictive model creation, validation, and performance reporting, along with realtime pathway analysis and automated evidence summaries, all in one integrated service. For high-throughput experiments, ASPEN also provides options for linking with NGS technologies, high-complexity assays, and digital instrumentation for both automated and continuous analysis and process characterization. ASPEN can evaluate a broad range of candidate biomarkers for their predictive value at multiple scales of interest including compound toxicity, molecular function, cellular process and clinical endpoints.

“ASPEN manages dataset aggregation and biomarker discovery utilizing the most effective practices in data science and bioinformatics today,” said Dan Corkill, PhD, computer scientist and senior adviser at IOMICS. “With ASPEN, researchers can now directly use machine learning to rapidly identify and assess promising signatures and do so from tools they are already familiar including Galaxy and Synapse. ASPEN's software-as-a-service approach is to combine statistics, bioinformatics and machine learning within a single workflow environment. This shifts many of the burdens of data staging and rote analysis from the human to the machine. This allows any sized lab, large or small, to focus far more on its discoveries and far less on the cost and inadequacies of traditional model building and analysis.”

“ASPEN represents a shift in life science analytics,” said Tom Zisk, technical lead on the product. "Everyone knows that weak data staging equates to ineffective analytics downstream, yet this remains the single most overlooked aspect of predictive model development today. Among its other unique features, ASPEN also provides seamless integration of your experimental results with real-time access to hundreds of open access data initiatives including TCGA, GTEx and the Human Cell Atlas. This ensures best-in-class data usage, quality profiling and domain-of-applicability in every discovery model. ASPEN is the only software product today that provides this level of integrated biochemical and omic data staging in an advanced machine learning context.”
“There are numerous free and commercial data science and machine learning tools available today but few tailored to the life sciences,” said Kevin O'Sullivan, President and CEO of Massachusetts Biomedical Initiatives, a Forbes Top 10 Biomedical Incubator located in Worcester Massachusetts. “Many of our early-stage companies, which have ranged from medical devices to drug discovery, neurodegenerative diseases to cancer research, have benefited from accelerated analysis and shorter time to IP development through the use of the IOMICS team and its products.”

“IOMICS mission is to develop the best possible tools and technologies to automatically extract meaning from a broader range of multiscale chemical and molecular data types,” said Gormley. “By placing cognitive computing in the lab we have enabled a greater number of academic and commercial scientists to create or augment effective bench-level discovery operations.”

ABOUT ASPEN:

Many analytics products today are based on a patchwork of tools and technologies. This is an expensive, time consuming and risk prone approach to discovery life sciences. ASPEN is a feature-rich software-as-a-service that allows you to rapidly mine and model multiple chemical and omic data types for molecular and pathway-level phenotypes utilizing best-in-class data profiling, model staging, machine learning and hypothesis testing strategies. ASPEN is a cost-effective approach for both individual academic laboratories and large-scale institutional research. Release 04062018.

ABOUT IOMICS:

IOMICS Corporation is an innovative analytics company headquartered in Cambridge Massachusetts. IOMICS believes the freedom to explore new ideas and rapidly deploy advanced analytics is essential to accelerating science, designing safer consumer products and improving healthcare. Our mission is to put advanced decision models to work everywhere — in the lab, in the clinic, and in the environment. IOMICS encourages collaborative model development and co-branding of turnkey applications for chemical engineering, medical research, and clinical care. Additional company and product detail can be found at http://www.iomics.us.
Contact Information
Sales Engineer
IOMICS CORPORATION
http://www.iomics.us
+1 888 789-2197 Ext: 1

Partnerships
IOMICS CORPORATION
http://www.iomics.us
888-789-2197 4

Online Web 2.0 Version
You can read the online version of this press release here.