Manufacturing and Distribution Guide

to Data + AI Summit

DATA+AI
SUMMIT 2021
FORMERLY SPARK+AI SUMMIT

Open Your World to Data + AI

Hello!

You're invited to open your world to the new innovations at Data + AI Summit 2021. With 100,000 registrants and more than 200 sessions, we're excited to have you at our biggest event to date. Summit is virtual this year, which gives you the flexibility to explore different sessions from anywhere in the world.

For those in manufacturing and distribution, this will be an opportunity to learn from industry leaders about how they are using AI to create resilient yet efficient supply chains, meet sustainability and yield goals through the smart factory, and anticipate and meet customer demand during volatile times.

This Manufacturing and Distribution Guide to Data + AI Summit is designed to ensure you get the most from your experience. We have organized a stellar lineup of manufacturing industry sessions with leaders, including John Deere, ExxonMobil, ABI, Plume Design and many more. We are also featuring a series of interactive solution demos to help you get started innovating with AI.

In addition, we have put together a manufacturing breakout session featuring a keynote from John Deere, along with a panel of global manufacturing leaders discussing how IoT and AI are transforming everything from the supply chain to the shop floor to the dawn of Equipment-as-a-Service.

Take the time to virtually network and ask any Databricks team members, aka Bricksters, questions — we are excited to help you! And be sure to check out the **full agenda** for the most up-to-date information.

We look forward to a compelling week of Data + AI with you!

Rob Saker

RVP and Global Lead Industry Leader — Manufacturing and Distribution

Contents

This guide is designed to help Data + AI Summit 2021 attendees in the manufacturing industry plan their experience and identify breakout sessions and events of interest. It is intended to complement the full Data + AI Summit website and in-app experience.

Data + AI Summit 2021 Overview

Data + AI Summit is the global event for the data community, where 100,000 practitioners, leaders and visionaries come together to shape the future of data and AI. This guide outlines specific tracks relevant to the areas of manufacturing that you may be interested in.

Data + AI Summit is virtual this year — and it's easy to register here ▶

May 24–28, 2021

Create Your Own Experience

We have created three different manufacturing experiences so that you can get the most from Summit:

1 MANUFACTURING FORUMS
Enjoy our industry-specific keynotes and panel discussions with thought leaders from some of the biggest global brands

2 TECH TALKS
Deep dive into specific topics and technical sessions with a leading expert from your field who has tackled the data and AI problems you are looking to solve

2 LIVE DEMOS
Join interactive Solution Accelerator demos for popular manufacturing use cases and AMA sessions with our data and AI technical experts

All Things Manufacturing at Summit

Use this section to schedule and design your Summit experience around manufacturing and our **industry forum**, **talks** and **live demos**.

Manufacturing Forum

WEDNESDAY, MAY 26   11:05 AM – 1:05 PM PT

Join us for our most popular industry event, where John Deere will present a keynote address on how they are leading the charge as a smart industrial company in precision agriculture, helping their customers increase yields through the application of AI to the millions of data points generated every day from John Deere's machines around the world. Hear firsthand how they are unlocking the power of data and AI to maximize supply chain efficiencies through intelligent manufacturing.

KEYNOTE
Smart Industry and Precision Agriculture

GREG FINCH, Senior Principal Software Engineer, John Deere

JAKE SANKEY, Software Engineer, John Deere

Manufacturing Tech Talks

We have a full agenda of manufacturing talks taking place at Data + AI Summit. See which ones best fit what you're looking for.

WEDNESDAY, MAY 26   3:50 PM PT

Improving Power Grid Reliability Using IoT Analytics

JIM BROWN, Director of Data Science, Neudesic

MINJIE YU, Data Scientist, DTE Energy

Society depends on reliable utility services to ensure the health and safety of our communities. Electrical grid failures have impact and consequences that can range from daily inconveniences to catastrophic events. In this session, we will demonstrate how we ingest hundreds of millions of quality measures each day from DTE's network of smart electric meters. This data is then further processed in Databricks to detect anomalies, apply graph analytics and spatially cluster these anomalies into "hot spots." Engineers and work management experts use a dashboard to explore, plan and prioritize diverse actions to remediate the hot spots. This allows DTE to prioritize work orders and dispatch crews according to the impact on grid reliability. Because of this and other efforts, DTE has improved reliability by 25% year over year.

WEDNESDAY, MAY 26   4:25 PM PT

Delivering Insights From 20M+ Smart Homes With 500M+ Devices

SAMEER VAIDYA, Architect, Plume Design Inc.

We started out processing big data using AWS S3, EMR clusters and Athena to serve analytics data extracts to Tableau BI. However, as our data team's size increased, as Avro schemas from source data evolved and as we attempted to serve analytics data through web apps, we hit a number of limitations in the AWS EMR and Glue/Athena approach. This is a story of how we used Databricks and Delta Lake to scale out our data processing and boosted team productivity to meet our current demand for insights from 20M+ smart homes and 500M+ devices across the globe, as well as from numerous internal business teams and our 150+ CSP partners.

Manufacturing Tech Talks

WEDNESDAY, MAY 26   5:00 PM PT

Analytics-Enabled Experiences: The New Secret Weapon

JORGE LOZANO, Manager, Steelcase | **KEVIN TIAN,** Scientist, Steelcase

Tracking and analyzing how our individual products are used has always been an elusive problem for Steelcase. The effects of the COVID-19 pandemic on corporate America shined a spotlight on office furniture manufacturers to solve for ways the workplace can be made safe again. During our session, we'll cover the technical challenges that we overcame as a team to set up a pipeline that ingests semi-structured and unstructured data at scale, performs analytics and produces digital experiences for multiple users. This presentation will be particularly insightful for data scientists, data engineers and analytics leaders who are seeking to better understand how to augment the value of data for their organizations.

THURSDAY, MAY 27   4:25 PM PT

Manipulating Geospatial Data at Massive Scale

CHARCEY PETERSEN, Software Engineer, John Deere | **CHRISTOPHER HICKS,** Staff Software Engineer, John Deere

John Deere ingests petabytes of precision agriculture data every year from their customers' farms across the globe. In order to scale our data science efforts globally, our data scientists need to perform geospatial analysis on our data lake in an efficient and scalable manner. In this talk, we will describe some of the methods our data engineering team developed for efficient geospatial queries.

FRIDAY, MAY 28   10:30 AM PT

NLP-Focused Applied ML at Scale for Global Fleet Analytics at ExxonMobil

SUMEET TREHAN, Director Applied Machine Learning, ExxonMobil

Equipment maintenance of a global fleet is traditionally performed using legacy infrastructure and data models, which limit the ability to extract insights at scale. However, to impact the bottom line, it is critical to ingest and enrich global fleet data to generate data-driven guidance for operations. The impact of these insights is projected to be millions of dollars per year. This talk will share how we leverage Databricks to perform machine learning at scale, delivering insights that enable outlier identification, capacity planning, prioritization of cost-reduction opportunities, and the discovery process for cross-functional teams.

Interactive Demo

Don't miss this live demo of one of our latest Solution Accelerators for manufacturing and distribution. You'll have the opportunity to interact with Databricks Solutions Architects and ask them anything!

WEDNESDAY, MAY 26   4:20–4:50 PM PT

How a Fresh Approach to Safety Stock Analysis Can Optimize Inventory

Learn how to rapidly build fine-grained analysis of buffer stock for raw material, work in process or finished goods inventory items that can be efficiently scaled across the supply chain. This frees up working capital that would otherwise be tied up in inventory and reallocates it to more productive uses.

Solutions Architect: BRYAN SMITH

WEDNESDAY, MAY 26   5:50 PM – 6:20 PM PT

Fine-Grained Time Series Forecasting at Scale

Learn how retailers and manufacturers are cost-effectively generating millions of item — and location-specific forecasts on a daily basis.

Solution Architects: KELLY O'MALLEY, BRYAN SMITH

Summit Manufacturing Checklist

Manufacturing Forum

WEDNESDAY, MAY 26

☐ **11:05 AM – 1:05 PM PT:** Keynote — Smart Industry and Precision Agriculture, John Deere

Manufacturing Talks

WEDNESDAY, MAY 26

☐ **3:50 PM PT:** Improving Power Grid Reliability Using IoT Analytics, Neudesic | DTE Energy

☐ **4:25 PM PT: Delivering Insights From 20M+ Smart Homes With 500M+ Devices**, Plume Design Inc.

☐ **5:00 PM PT:** Analytics-Enabled Experiences: The New Secret Weapon, Steelcase

THURSDAY, MAY 27

☐ **4:25 PM PT:** Manipulating Geospatial Data at Massive Scale, John Deere

FRIDAY, MAY 28

☐ **10:30 AM PT:** NLP-Focused Applied ML at Scale for Global Fleet Analytics at ExxonMobil, ExxonMobil

Interactive Demo

WEDNESDAY, MAY 26

☐ **4:20 PM PT:** How a Fresh Approach to Safety Stock Analysis Can Optimize Inventory

☐ **5:50 PM PT:** Fine-Grained Time Series Forecasting at Scale

Ask an Expert

Cross-Industry live AMA

FRIDAY, MAY 28   9:10 AM – 10:10 AM PT

If you'd like to learn more as a follow up to any of the sessions, please reach out to your account manager to coordinate a meeting with:

- Manufacturing leaders and subject matter experts
- Technical experts in manufacturing and distribution data
- Solutions Architects who have helped hundreds of customers

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