

BD-NTU AI Data Lab Collaboration – Machine Learning for Supply Chain Optimization

On May 31, 2021, Becton Dickinson in Singapore and Nanyang Technological University (NTU) launched a joint research project to develop AI solutions for Planning & Supply Chain over a two-year period.

"BD and NTU have had numerous partnerships where BD has primarily provided technology, such as flow cytometry, for research. In this collaboration, NTU will share their expertise in machine learning to help develop a solution for optimal prediction and forecasting of products for manufacture and distribution," said **Raymond Chow, VP/GM, Central Asia**.

The COVID-19 pandemic has caused a significant global crisis, disrupting supply chains. As a result, many companies are exploring new technologies to address challenges associated with demand forecasting, given the market volatility, complexities, and rising standards in healthcare treatment. This crisis has taught us the importance of constantly correcting and analyzing dynamic changes affecting the industry. We need to manage inventory due to sales volatility and optimally improve production and distribution in response to demand surges for products directly in high demand during the pandemic such as vaccination needles, BD Veritor CoV2 diagnostic tests.

Min Yuan Seow, VP Global Logistics & Distribution, stated, "The collaboration will help accelerate BD's plan to build in-house expertise. It will also expose BD associates to best-in-class data science research. I look forward to this collaboration enhancing the quality of our sales and operations planning, which will greatly improve BD's competitiveness." The aim of this collaborative project is to design and implement machine learning solutions, including big data processing, probabilistic modeling, and deep learning, for forecasting the demand of essential medical products.

Professor Jagath Rajapakse, Professor of Computer Engineering at NTU, remarked, "Machine learning and AI have made tremendous improvements in research, enabling enhanced predictions and recommendations, and providing suitable tools to help BD improve demand prediction."

Suhwan, project lead, said, "BD and NTU will collaborate in a joint research lab co-located at BD and NTU headquarters in Singapore. This setup will expedite the AI research integration into the company's infrastructure."

Special thanks to the BD teams who have contributed to the project's success:

- Steering Committee: Min Yuan Seow, Raymond Chow, Paul Holt
- Project Facilitators: Soumyakant Dwivedy, Delton Teo
- Project lead: Suhwan Chung
- Project core team (Cross Function): Sally Shen, Justin Lau, Ying Nan, Wan Sian, Gary Chong, Kenneth Lim, Rebecca Neiwi, Kavi Loganathan, Menyee Wong