COVID-19 Impacts on Adoption of Artificial Intelligence

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Australia

Slowdown in machine-learning adoption

Machine learning is the computer intelligence responsible to imitate human behavior through studying numerous relevant data to identify a pattern. This is one of the main reason Machine Learning requires a huge scale of data and algorithms that represents the human behavior. The historical data sets are used to build models to identify the desired pattern, changes or event which helps to improve a decision-making process. [1]

As COVID-19 hit the whole world, Australian organizations started shutting down planned projects – disrupting numerous IT projects including Artificial Intelligence and Machine Learning projects. Some organizations were even forced to repurpose project budgets for survival during the pandemic, rather than meeting the project objectives. Artificial Intelligence has already been quite widely adopted into the Australian businesses. Banks are using AI to identify fraud and compliance risk; businesses are using AI to organize schedules, improve the workplace environment, and make better decisions; even hospitals are using AI for better and efficient diagnosing of diseases. [2]

There is no doubt how COVID-19 pushed Australian businesses towards an accelerated digital transformation, which has its own problems. Many businesses, particularly small businesses who are just at the initial stage of their digital transformation journey, are not aware of AI technological development. These unaware businesses can rarely utilize their data through AI solutions. A report by Australian Institute of Company Directors (AICD) hinted how Australian directors were struggling to drive innovation due to lack of talented individuals with adequate digital literacy to understand the implication of the AI. Communication barriers and shortage of professionals are leading to a stagnant adoption of AI across Australia. [3]

The Australian AI Action Plan and other Government Initiatives.

The Australian government has been supporting AI long before the COVID-19 pandemic shook the world. Investment in AI currently stands at half a billion dollars since 2018 according to a recent budget published by the Department of Industry, Science, Energy and Resources of the Australian Government.[4] The Commonwealth Scientific and Industrial Research Organization (CSIRO) has been applying cutting-edge AI into multiple research tasks ranging from technology-driven agriculture to smart energy grids and even in improving efficiency of manufacturing. The organization has been collaborating with more than 30 utilities from around the world in perfecting data driven analytics technology to predict pipe failure more accurately.[5]

Australia's Artificial Intelligence (AI) Action Plan developed by the Australian Government sets out a unique vision for Australia in an aim to lead the development and adoption of trusted,

secure, and responsible AI which includes the plan for Digital Capability Centers and National AI Centre. The plan developed during the pandemic focuses significantly on four areas: (i) AI adoption for job creation and to boost productivity, (ii) grow and attract world-class talent and expertise, (iii) harness Australia's world-leading capabilities to solve national challenges and benefit all Australians, and lastly to ensure that the AI technologies being used are responsible, inclusive and reflect Australian values. [6] The country also announced a broad technological plan called the Digital Economy Strategy which discusses the plan to drive the whole digital economy including AI.[7]

The government is highly interested in developing the AI infrastructure of the country, reflected in the 2020-21 budget: establishment of 4 Digital Capability Centers to lay the foundations of the Australian Artificial Intelligence and digital ecosystems. The centers are being built with an aim to help drive the business adoption of AI technologies.[8] The government is also establishing the National AI Centre which would support projects that improve business capability through AI, enable industry and academic (or researcher) collaboration, and cater to strategically aligned work ability in the whole AI ecosystem. The AI Centre is expected to be of $50 million and will be established within the Commonwealth Scientific and Industrial Research Organization (CSIRO).[9]

University of Sydney and DetectED-X improved COVID-19 diagnosis using AI

In Australia, AI was popularly used in hospitals in assisting diagnosis of diseases like cancer much more efficiently. Ai is also being used for in-vitro fertilization (IVF) by the doctors to select the most viable eggs. Even aged-care facilities are using AI in sensors to efficiently detect and alert if any of the residents are in trouble or requires assistance.

AI has been used in multiple medical diagnosis in Australia. One of these initiatives was the affiliation between University of Sydney and the startup DetectED-X that led to the development of a technology to improve the accuracy of breast cancer detection. Subsequently, this technology has been successfully modified to detect COVID-19 using lung CT scans of patients. The Australian-designed breast cancer diagnostic tool has seen significant improvement in their ability to diagnose breast cancer, according to a 2016 study.[10]

DetectED-X was not the only AI firm to repurpose their progress in an attempt to beat the COVID-19 global pandemic. Googls's Deepmind has been now seen successfully prediciting the protein structure of COVID-19 virus. CSIRO's Australian e-Health Research Centre is currently using the machine to identify possible strains of the virus on which vaccines will be tested. [11]

The role of AI in Australia's economic recovery from the COVID-19

AI would contribute significantly in the economic recovery of Australia. The Australian Government is investing almost $800 million through the JobMaker Digital Business Plan to assist

businesses take advantage of digital technology, according to the 2020-21 Budget of Australia. The plan is supposed to create jobs to aid to the economic recovery of Australia. [12]

Lockdowns set up for preventing the COVID-19 spread have been damaging the economy for a long time which is why AI is being introduced to efficiently track and trace through mass tests so that only the affected are quarantined instead of nationwide lockdowns – to minimize the economic impact of lockdowns. Projects in Australia are currently underway to aid beneficial community behaviors to prevent further spread by AI-induced app. Data of spreads are being analyzed and used by AI to assist in post-COVID guiding policy making and research initiatives. AI is also helping retailers to respond to disruptions to supply chain to prevent crisis, and also prevent the spread of fake news. [13]

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