

Heated Start-up Race is on to capture AI-driven APAC Healthcare

10 June 2021 | Analysis

A comprehensive analysis by Apoorva Bajaj, Practice Head-Financial Markets at GlobalData



AI ecosystem in healthcare has grown in the recent past, as companies are looking to capitalize on the benefits provided by AI to improve patient outcomes and enable convenient, cost-effective access to healthcare solutions. In addition to the significant increase in digital penetration and Internet connectivity, favourable government policies (e.g., China, Thailand and the Philippines) have been key driving factors of growth in healthtech startups across the Asia-Pacific (APAC) region. Against this backdrop, the APAC AI in healthcare market is set to grow substantially due to increasing VC investments in AI healthcare startups, cross-industry partnerships and collaborations, says GlobalData, a leading data and analytics company.

AI is being used by healthtech startups for various applications within healthcare domain such as Patient Data Analytics, Medical Imaging, Lifestyle Monitoring, Drug Discovery, Vaccine Trails, Virtual Assistants, Wearables, Health-records, Mental Health & Wellness, and Robot Assisted Surgery, Dosage Error Reduction among others. Medical Imaging based on Deep Learning Neural Networks (a sub-field of AI) can be used in diagnosing diseases with the help of historical data. AI can also be used in detecting cancerous tissues and diagnose certain chronic heart diseases.

APAC lags North America in terms of VC funding

GlobalData reveals that, in terms of total venture capital (VC) funding received by healthcare startups across the globe, North America startups accounted for approximately 60%, followed by APAC startups with approximately 25% and Europe & MENA startups with approximately 15% of the total funding. In 2020, VC funding for APAC startups has increased by around 37% YoY.

In 2020, within the healthcare domain for APAC-based startups, Diagnostics sub-sector received around 20% of the total

funding; e-Marketplace received 15%; followed by Insurance Tech and Nutrition & Wellness sub-sector with 10% of the total VC funding.

Within APAC, the countries can be divided into three broad categories depending on the maturity of healthcare infrastructure. Countries like Vietnam, Myanmar and Pakistan are categorized as 'Evolving', due to low healthcare spend/capital, low GDP/capita, high imports of generic drugs and relatively poor healthcare infrastructure. Countries like China, India, Indonesia, Thailand, Malaysia, and the Philippines are categorized as 'Growing', due to high GDP/capita, healthcare spend/capita, local production of basic generic drugs and healthcare infrastructure. Countries like Singapore, Hong Kong, South Korea, Australia, and Japan are categorized as 'Developed' on account of high GDP/capita, high healthcare spend/capita, specialty pharma and biotech manufacturing and mature healthcare infrastructure.

China bets big on AI in healthcare

Apoorva Bajaj, Practice Head, Financial Markets at GlobalData, says: "China is one of the few developing countries, which is integrating AI with traditional industries, including healthcare. The country is investing heavily to ramp up digitization in its healthcare industry. As a result, China-based AI healthcare startups are benefiting from the AI-focused government policies, encouraging investment and private-public partnerships."

GlobalData's Startup Scorecard has identified 16 startups from the APAC region, which are leveraging AI for various use-cases in the healthcare sector.

Mr Bajaj explains: "GlobalData's Startup Scorecard enables identification and shortlisting of startups for respective use cases as potential investors, partners, acquisition targets or even as vendors. The Scorecard ranks 10,000 startups using quantifiable data to ensure that it is objective and can be comparatively measured across different sectors, geographies and themes."

Key information about each of these startups, including founding year, total funding raised till date, latest round of financing (amount raised, series and date), headquarters, sub-sector focus and key investors, are highlighted below.

- **SigTuple Technologies:** India-based SigTuple is building intelligent screening solutions to aid diagnosis through AI-driven analysis of visual medical data. It uses AI to build smart, intelligent solutions for complete peripheral blood smear analysis and automated urine microscopy analysis.
- **Standigm Inc.:** South-Korea-based Standigm is using innovative AI to remove the traditional guesswork from data analysis, automatically examine whole biomedical databases to learn what is hiding just out of sight. By applying machine learning technology to real data, it eliminates some of the uncertainties in the drug discovery process.
- **Yaoyanshe:** This China-based startup is using AI to provide relevant operational data and insights required for drug research and development at the clinical research stage.
- **Keya Medical:** China-based Keya uses deep learning techniques for disease diagnosis and treatment. It has developed DeepVessel AngioBot, which is an AI-based innovative medical device that uses robotic technologies and advanced sensors to provide physicians with a stable operating platform, allowing for remote control and operations.
- **NeoX Biotech:** This China-based biotech startup combines AI with biophysics for drug research and development. It has developed a sophisticated platform for the early discovery of therapeutics by characterizing protein-protein interactions, enabling cancer patients to get effective treatment.
- **InferVision:** China-based InferVision aims to empower doctors with higher efficiency and benefit patients with better diagnosis, outcome and lower cost. It uses AI and deep learning technologies to develop multiple platforms, including an AI applications management platform, an AI data-mining research platform, and several AI clinical application platforms, as well as medical AI systems for quality control, health management, and scientific research.
- **CXA Group:** Singapore-based CXA provides an AI-based benefits marketplace for employer insurance. It offers a platform for health insurance, HR management, employee benefits, and health & wellness plans. It provides an AI-based app for people to connect them with health & wellness products and services.
- **Deep Intelligent Pharma:** This China-based startup is dedicated to empower and accelerate drug discovery, development and registration through the most advanced AI technologies. With its end-to-end AI-driven platforms, it enables clients to efficiently move compounds from the lab to post-marketing stage with quality.

- **mClinica:** Singapore-based mClinica has developed SnapRx, which provides public health data and analytics from over 100 million patients whose data was previously unavailable. It is a proprietary app that uses AI to seamlessly generate health data from prescriptions in real time.
- **KaiPharm:** South Korea-based KaiPharm has developed KMAP, which combines AI with transcriptome profiling to generate deep insights into MoA and drive efficient drug development. KMAP analysis is further integrated with experimental data on drug reactivity and drug-target interactions using bioinformatic, chemoinformatic and AI-driven deep-learning to deliver rich insights into drug MoA, including both on-target and off-target effects.
- **iCarbonX:** China-based iCarbonX is building an ecosystem of digital life based on a combination of an individual's life data, Internet and AI. They are combining data from new biological measures with experiential data from millions of people around the world and using advanced AI to search the data for new signals about health, disease and aging. The startup is fundamentally transforming the health and wellness of individuals by unlocking the power of deep and dynamic digitization of biology.
- **Maxwell MRI:** This Australia-based startup offers a digital clinic, which streamlines the assessment and diagnosis of prostate cancer. Its web-based platform analyses medical data, including medical imaging, blood and genomic data, to manage the risk of prostate cancer.
- **Practo:** This Indian-based startup uses AI algorithms on the customers' previous searches, feedback as datasets to predict their needs. The startup also uses AI and ML to better assist doctors with important context and data on millions of patients to help them predict and drive better decisions.
- **Lunit:** South-Korea-based Lunit provides AI-powered total cancer care solutions to help discover and predict cancer treatment outcomes, and deliver timely and individually-tailored cancer treatment.
- **Touchkin:** This India-based startup has developed an AI chatbot that leverages evidence-based cognitive-behavioral techniques to make the patient's feel heard. The startup uses domain-specific AI capability that recognises user sentiment and emotion especially relevant for behavioural health and a content library for evidence-based techniques that is optimised for delivery through a chat format.
- **Healint:** Singapore-based Healint facilities neurological patient treatments using deep analytics and machine learning. The Startup's Migraine Buddy platform uses ML to digest the data and real-world evidence for patients looking to control mind-splitting migraines.

Mr Bajaj concludes: "The use of AI in APAC healthcare sector is still in nascent stages and this bodes well for startups as they look to build large sustainable companies providing convenient, scalable and low-cost access to quality healthcare solutions to their customers. Given the huge potential of using AI and ML algorithms in the various sub-domains of healthtech solutions, the opportunity seems significant driving access to VC funding for these startups working in the healthtech domain. However, shortage of skilled workforce and lack of regulatory guidelines for medical software are some of the major factors that may hinder the market growth."

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Apoorva Bajaj is working as Practice Head-Financial Markets at GlobalData, where he is responsible for developing innovative products using various alternative datasets like patents, filings, jobs, deals, news, social media, and themes for financial market clients. His team has developed Quant based Startup Scorecard to rank 10,000 Startups across three broad pillars: Investment, Innovation and Market Presence, across sectors and geographies. Prior to GlobalData, Mr. Bajaj is a CFA Charter holder and completed his MBA from IIM Kozhikode (Gold Medalist) and B.Tech from IIT Dhanbad.