M3, Inc.

Joint AI Dissertation by M3, Tokyo U., and Keio U., Accepted at US's AAAI Conference
~ Medical AI Software Systems Development and Implementation Classification ~

M3, Inc. (Headquarters: Tokyo, Japan; CEO: Itaru Tanimura; URL: https://corporate.m3.com/; "M3," below) would like to inform you that the dissertation produced through a joint effort between M3's medical publications group, The University of Tokyo Institute for Future Initiatives (URL: https://ifi.u-tokyo.ac.jp/en/; "IFI," below) , and Keio Medical AI Center (URL: http://k-maic.keio.ac.jp/; "K-MAIC," below) regarding, medical AI software systems classification, was accepted at the AAAI/ACM* Conference on Artificial Intelligence, Ethics, and Society (AIES), which was held in New York on February 7~8, 2020.

* AAAI: Association for the Advancement of Artificial Intelligence; ACM: Association for Computing Machinery

Background

M3 operates m3.com, a specialized web portal for medical professionals that delivers healthcare related information to its 280,000+ physician members in Japan, and offers marketing and clinical trial services. Recent business expansion have been in areas such as AI diagnostic tool development, genome diagnostics provision, and stroke rehabilitation centers, no longer limited to pharmaceutical marketing. "7P Projects" aim to integrate such businesses in order to provide holistic solutions for multiple issues within individual therapeutic areas. Furthermore, presence outside of Japan include the U.S., U.K., France, China, Korea and India, with aggressive business expansion overseas that has amassed over 5.8 million physicians as members across our global platforms, allowing provision of a wide range of services.

In an effort to propel the development and clinical implementation of AI medical devices and services, M3's medical publications group, IFI, and K-MAIC has conducted a series of seminars surrounding Medical AI (please see IFI website for details) since January of 2019. These discussions have allowed the team to gain valuable insights from the invited stakeholders spanning medical professionals within the medical AI industry such as physicians, researchers, venture companies, JMA, and MHLW. In an effort to promote the development and adoption of medical AI systems, the team created a new categorization framework called "Medical Artificial Intelligence Types (MA Types)" for classifying AI in medicine.

AAAI is an international science society headquartered in the US, and is considered the top international AI association within the industry. ACM is the world's largest association of computing professionals.   AIES conference is an annual event held by AAAI and ACM.

Dissertation Overview

In recent years, there has been much hope placed in the utilization of AI systems such as machine learning, in effort to curb the strain on medical professionals such as physicians.   However, there still are many obstacles for implementation within clinical sites.   This framework for categorizing Medical AI Systems which can be used by medical professionals, policy makers, engineers, and end-users, will contribute to the development and adoption of AI systems across healthcare.

The Medical AI Types (MA types) classified based on the degree of necessary medical staff intervention:

- Type A, B, C: Input of data and/or Analysis of the data requires healthcare professional intervention
- Type D, E: Output of Analysis requires healthcare professional intervention
- Type F: No healthcare professional intervention required

Relationships among Physicians, Users and Machines
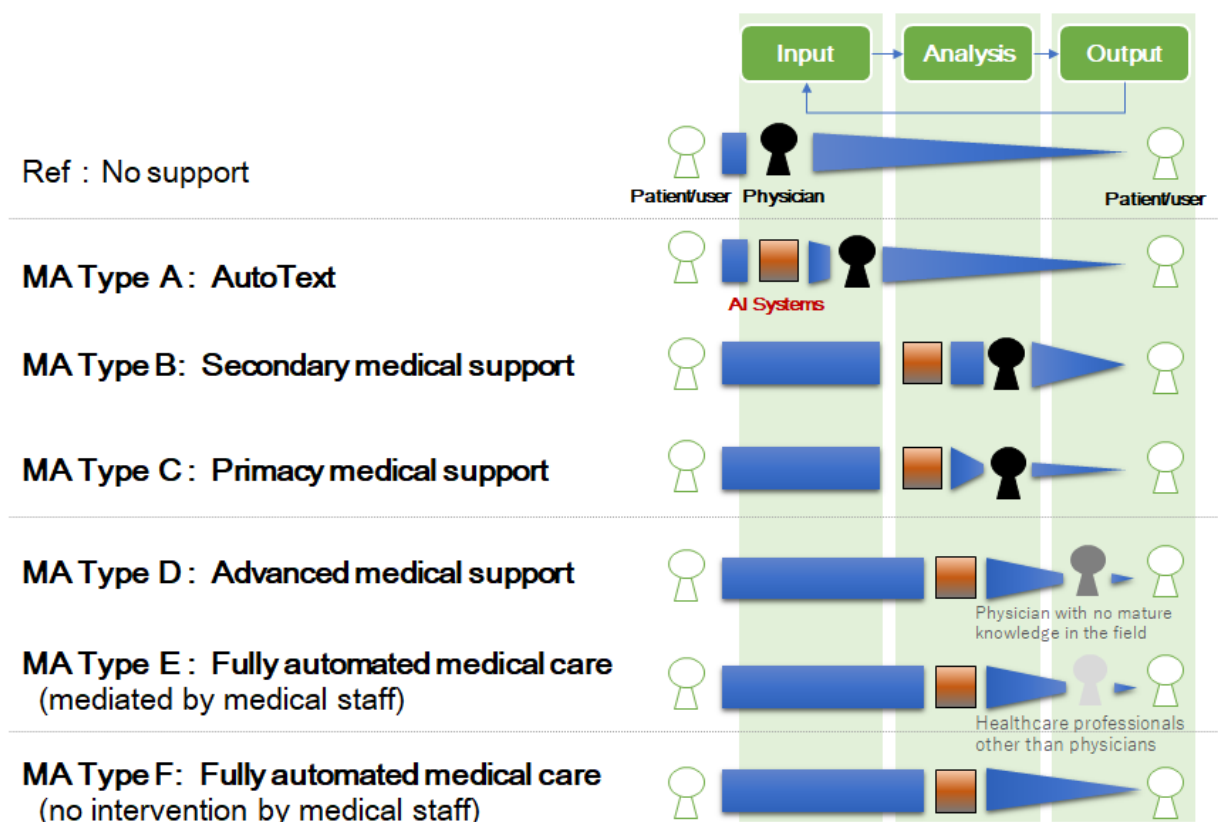
* "MA types" was created in full consideration of current regulations and technologies, but is also a framework that will not inhibit innovation of such regulations and technologies.

Dissertation Information