Dr. Google Will Predict Your Medical Health

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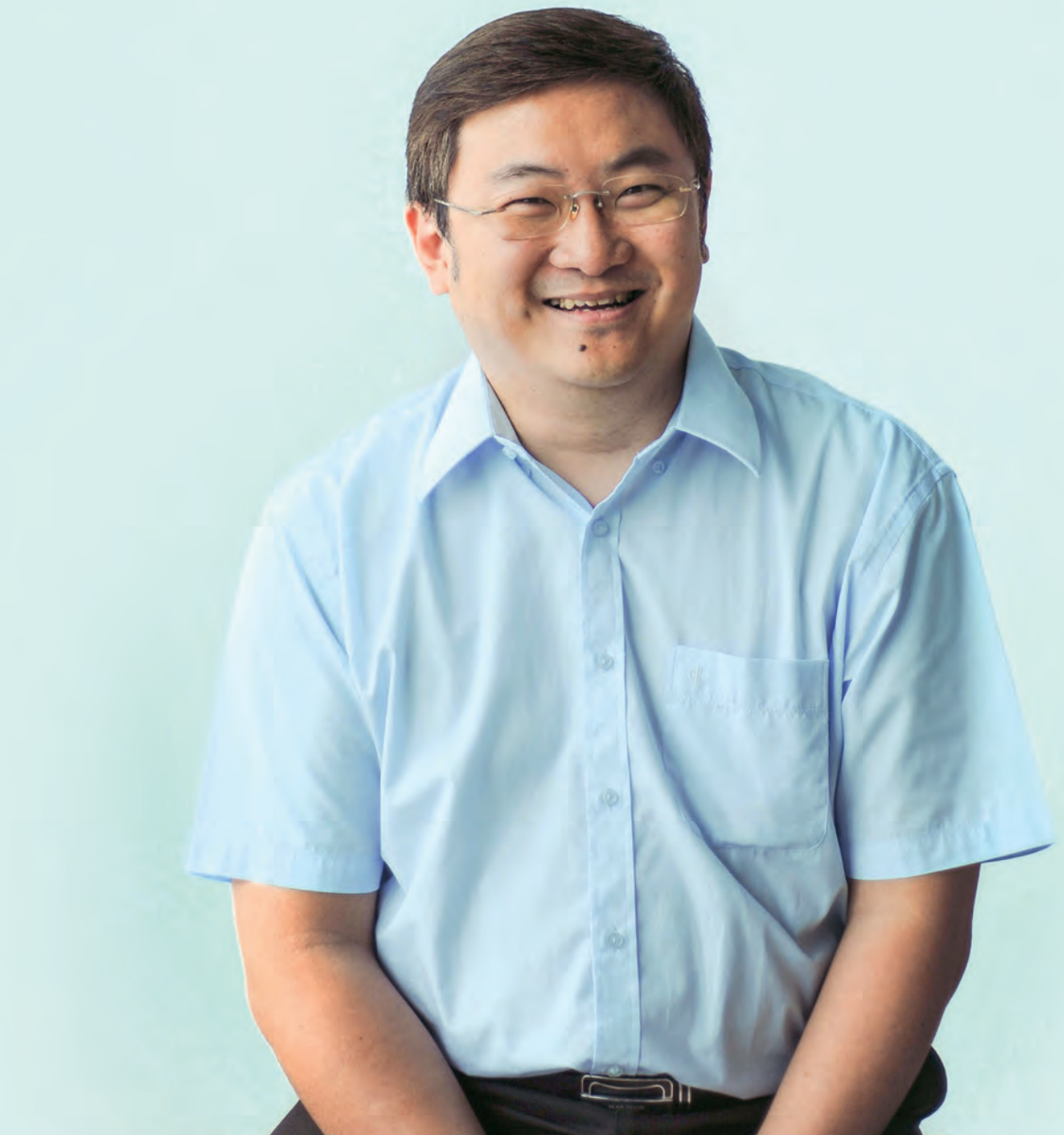

It's a remarkable fact that life expectancy has considerably increased today as a result of better access to medicines and vaccinations, better nutrition and improvements in public health.

t is a sign of our progress but it also means that we have a greying population in need of medical care.

This is why medical care is becoming increasingly predictive in nature — to make people as self-sufficient and self-reliable as possible. Medical data analysis is becoming as important as the research and development arm of pharmaceutical companies. Imagine; a forty year old person might be able to predict the diseases that he or she would develop in the future.

Prevention comes in many forms; medical or lifestyle. But first comes knowledge and that is where this project kicks in. Cardiovascular disease is one of the leading cause of mortality worldwide, and it remains undiagnosed until it is too late for any preventive steps.

Together with Assoc. Prof. Jean-Guy Schneider from Swinburne Melbourne, we aim to create a medical search engine for doctors and medical practitioners. By creating a paradigm of historical data of patients with cardiovascular disease, doctors can compare their patients' condition with people who had the same or similar medical condition and can see how their health progressed.

Patrick is the Assoc. Dean of Computing here at Swinburne. He also lectures in Software Engineering and Big Data Analytics.

This is a complex big data project as hospitals keep all the records of their patients and we need to build a relationship across data of different kinds of medical examinations, and then develop a flexible meta-model. Our analytical tool needs to make sense of this big data, and the interface or front-end needs to be user-friendly.

With our software, doctors would be able to look up the historical data of patients with the same or similar medical conditions and discover the early indicators of cardiovascular diseases. Identifying the specific indicators usually needs time and access to a vast medical literature; this requires resources which medical practitioners do not have. That is why they typically follow guideline-based treatment. After identifying the indicators, a more personalised treatment or preventive plan can be made.

In order to build this “Dr. Google”, we are partnering up with Austin Health in Melbourne and Sarawak General Hospital in Kuching. They are verifying and validating the research results of our analysis phase by phase. Once we have applied the complex statistics and improved the data mining aspects, the project will enter the next phase which is to build an easy to use system which healthcare professionals can use. Our medical partners will be assessing “Dr. Google” in usability and the accuracy of its predictive models.