In all the years I have dreamed of slipping on my white coat and casually tossing my stethoscope around my neck, I never once imagined competing with a computer for a job. The field I once considered to be at the pinnacle of job security based on the all too convincing evidence that "everyone gets sick," will face drastic restructuring in the near future as artificial intelligence rivals human ability to diagnose and treat the world's patients.

Some of the most noteworthy medical AI is developing in radiology and data mining. Technology giants and prominent research institutions have recently tested computer ability to read scans and detect early symptoms in illnesses like cancer and heart disease. On average, AI successfully diagnosed 96% of all cases – increasing the accuracy and decreasing the false alarm rates of expert physicians by 8% and 2% respectively. Meanwhile the effects of data mining patient histories give machines the ability to connect symptoms and patterns across different diseases that are less obvious and go undetected by doctors. For example, tests conducted against the American Heart Association's risk factors for heart attack revealed that mental illness, not included on the AHA's list, could be an important determinant, while diabetes, a factor the AHA considers important, was less correlated. The data seem to make the case that some responsibilities of the physician can be better performed by AI.

Many industries like technology and retailing are already experiencing some of the full capacities of today's AI in their advertising and distribution channels, while its full effect on the medical field is largely unknown. It is somewhat impossible to project the full breadth and depth AI's reach will have on current undergraduate and medical students. In 10 years, it is very possible that your annual appointments with general practitioners will be completely replaced by technological substitutes like webcams and integrative machines. It is also possible the pathology and precursors of well-known diseases will change as AI integrates patient information from across

the country. And though the algorithms, patterns, and cross analyses AI implores are artificially induced, the implications that follow are an unavoidable reality.

I once had a professor say that biology and medicine were the ultimate vanity project: cells coming together to learn about and appreciate themselves. Strange to think that the very fabric of our existence, the subject matter we labor over tirelessly to improve human life, is the very reason we cannot compete with the "deep learning" capabilities of AI. We tire, we hunger, we dehydrate while machines can work effortlessly, indefinitely, and without lag. However, perhaps the most encouraging statistic to emerge from all of these studies was that diagnosis error, caused by either physicians or technology, decreased by 85% when treatment of patients was coupled with AI medical support, suggesting man and machine might just be better together.

Today, universities are plagued with perhaps the most difficult task ever created in higher education: preparing students for careers that do not yet exist. While methods and technology may change more rapidly than ever, certain skills to be successful will remain the same. In order to prepare its students for the future, SMU should focus on ethics, writing and communication, and diversity of thought. No matter what drastic restructuring AI brings to the modern world, the humanity piece will always be up to us. How we approach one another, collaborate, and seek to understand different intentions and ideas will set the parameters in which we use our newfound advancements. SMU's students could also benefit from more ground level technology training. Crude skills in coding and computer science would give us the vocabulary and the confidence to compete competently in the language and methods of the modern job market. Opportunities for exposure to new technology broaden the academic experiences of humanities, arts, and business students who may not otherwise have the chance to learn from it on a daily basis.

While AI may be able to replicate, improve even, the intricate networking of signals that make up human learning, I am convinced it will not be so soon that AI learns to do the same with the human heart. As anyone who has ever battled, or known someone who has battled a serious illness can tell you, healing encompasses much more than the physical body. And although they may be familiar with their own rolodex of viruses, high capacity computers and automated surgical instruments may never understand the joy of new life or the pain of lost loved ones. So though the daily routines of the physician – how they read scans, what symptoms they look for, and how they track medical data – may drastically change, the long term oaths of beneficence, nonmaleficence, autonomy and justice will go untouched. AI may soon become the most sophisticated analyzer and predictor of health the world has ever known, but the propagation of care and compassion to everyday people will always be our responsibility.