Thesis Project Portfolio

Automated Air Removal Device for Infusion Pump

(Technical Report)

Introduction of Artificial Intelligence in the Healthcare Industry

(STS Research Paper)

An Undergraduate Thesis

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Quinn Lewis

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Department of Electrical and Computer Engineering

Table of Contents

Sociotechnical Synthesis

Artificial Intelligence is a very popular buzzword used when discussing the future of work. From driverless cars to grocery store self-checkouts, jobs are being threatened by automation. Despite this phenomenon, job replacement does not happen very quickly. One particular sector where this is true is the medical field. I plan to explore why Deep Learning algorithms in radiology are so slowly emerging in clinical settings. This analysis will focus on how technical and human factors are inhibiting a more expedient arrival of this new technology. I conclude that the dichotomy of traditional radiology vs AI as a competition must be ignored for tech companies and medical professionals to fully embrace cooperation.

For my technical project, we prototyped an automation of a common nurse tasks, removing air from an IV line. As long as seeing the challenges that come with cooperating with the medical field, we learned the strict standards that govern medical devices. These standards protect consumers from faulty solutions, but make it very hard for engineers. While our device did not use Deep Learning, there is room for a device to learn viscosity and water pressures in order to adjust motor power.

I hope our research sheds light on both the opportunity for and challenges of automation and Deep Learning in the medical industry.