With the onset of an aging population, there will be a growing demand for healthcare providers to help meet the needs of the elderly. However, there will not be nearly enough healthcare professionals to keep up with this demand and resources will be stretched thinly in order to accommodate everyone.

The main robot in development is known as “Brian 2.0”. Brian 2.0 is being developed to be utilized in hospitals, nursing, private homes, schools, and workplaces. Giving “Brian 2.0” the capability of monitoring food intake would make him a useful tool in these fields, as it would provide healthcare workers and caretakers an easy way to ensure that these specific individuals are getting adequate nutrition during their meals.

The purpose of this project is to develop a monitoring system that can be used in conjunction with any assistive robot. The final system will consist of a utensil holder and a food tray both equipped with sensors, and a web camera. All these devices will be connected to a single computer which will act as the main processing unit through a designed software package. This system will be able to be integrated with “Brain 2.0”. Through blob tracking, motion detection and sensor input, the system will be able to detect whether a user is eating or not, as well as the type and amount of food being eaten. If the system detects that the user is not eating, it will give visual or audio prompts to encourage healthy eating habits.

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MIE491 - Capstone

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