**\section{Introduction}**

**\subsection{Motivation}**

Agriculture provides most of the world’s food and fabrics. Cotton, wool, and leather are all agricultural products. Agriculture also provides wood for construction and paper products.

These products, as well as the agricultural methods used, may vary from one part of the world to another. \cite{importantargi}

Meaning that maintaining the good environment for agriculture is important to maintain human food sources. However one of the concern of farmer in the world of agriculture is Weed .\cite{weedproblem}

Weeds cause many problems. Most importantly, weeds can reduce crop yield. Weeds cause greater crop losses if they occur in large numbers, if they get a head start on the crop, if they are especially vigorous, or if they produce allelopathic substances.\cite{weedproblem}

Thus, having a system that can reduce number of weed is necessary to help farmer. This is where the smart farming play a big role in agriculture industy.

**\subsection{Goals}**

The component of smart farming that are we focus on in this paper is weed detection. Thus, main goal in this project is to develop a system that able to detect weed in a specific field namely sugar beet field. The solution involves deep learning method to detect weed, a few autonomous drones as the method’s platform. The implementation of the method and the platform only at the level of simulation.

**\subsection{Paper Flow}**

The rest of the paper is presented as follows: Section 2 presents the background on deep learning models and definition of terms used in this paper followed by related works in section 3. The Details of the proposed methods are presented in Section 4. The experiment on the proposed model is discussed in section 5 with the result. Finally, conclusion of this paper on Section 6.