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Personal Research Interest

My research seeks to further reduce the human engagement in biosystems. It is mainly deployment of computer and electronics in agriculture. On one hand, by the advent of new technologies in information technologies, now the employment of intelligent system for off-road purposes is getting cost-effective. On the other hand, the world population will soon grow to ten billion while the agricultural lands do not get increased. In addition, labour employment difficulties in developed countries and also increasing demand for organic products have shaped a new trend for scholars.

My most recent research in this regard has been to design and develop a cost-effective system for autonomous weed management. In brief, it replaces the human intelligence to identify the main crop from the other plants and remove them in the crop-row which has been a challenging task thus far. Cutting edge technologies in machine vision and machine learning were deployed on a \$35 computer and tested on maize lands at Akdeniz University in Antalya.

To guide the machine which provides movement off weeding mechanism, I proposed a control methodology for an unmanned vehicle e.g. tractor. The tractor was modeled over canonical off-road terrain and tractor formulations and then verified over an extensive set of numerical simulation.

Obviously, such an idea requires financial and technical support. Hence it is planned to initiate a research team to be initiated at Near East University comprising of individuals interested in integrating cutting-edge technologies into agriculture. Having short and long-term goals it will be supported step by step by TUBITAK, European Universities, agricultural companies and etc.

The aim is to focus on Cypriot (Mediterranean) agriculture e. g. horticultural land and product. This not only eases the research and deserves for SCI publication but also significantly increase the chance for commercializing. Accordingly, the land and crop properties will be inspected by a vision sensor from the drone as well as other sensors on the ground which have Internet-of Things.