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|  | **HASAN KALYONCU UNIVERSITY**  **Computer Engineering Department** **CENG 499 Project Proposal Form** |

**Part I. Project Proposer**

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**Part II. Project Information**

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| **Starting Term** | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 2 | 0 | 2 | 1 | / | 2 | 0 | 2 | 2 | |
| **Title of the Project** | Food identification system: mobile-based Health guidance system |
| **Project Description** | |
| The Project aim at dveloping an application for food recognition and identification, and calories calculation. The user can take a photo of the meal then the application will recognise the gradients (contents) of the meal and calcute the amount of calories, fat and suger inside it.  The project will explore the implementation of the software on the following hardware and select one hardware of them:  1. Sumsung Mobile/Tablet, 2. Raspberry Pi4 mini-computer, 3. Jetson Nano Nvidia embeded system.  These hardware devices are available with the supervisor and no need for te student to purchase them.  Also, machine learning techniques like Deep learning, visual coding, ensemble learning will be explored and one of them will be selected. | |
| **Project Justification** | |
| **Novelty** | |
| **New aspects** | The aimed software application is a challenging problem since it includes object recognition applications. The software will reside in the mobile device itself. |
| **Complexity** | |
| **Challenging problem and issues** | The student will deep learning and image analysis programming teachniques He/she also to master mobile and android programming. |
| **Related computer science fields and subfields** | Computer Graphics, Machine learning, image procesing and analysis. |
| **Tools** | Python and/or C++ programming, Android programming, Open CV |
| **Risk involved** | |
| **Potential problems and alternative solutions** | Students need to study the interface design in addition to their expected skills from Computer Engineering courses. |
| **Minimum work required** | 3-4 months |