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|  | **HASAN KALYONCU UNIVERSITY**  **Computer Engineering Department** **COME 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 | 0 | / | 2 | 0 | 2 | 1 | |
| **Title of the Project** | Virtual reality (VR) mobile-based tour guide for Gaziantep city |
| **Project Description** | |
| The Project aim at dveloping an application tour guide for Gaziantep city. The tourist user can run the App which open the mobile camera and image the street.   * The user can search for a target place, then the VR tools will show a virtual guid to it. * Moreover, if the user focuses the camera on a certain place or land mark, the guid will provide the availble information on it.   These information can be clustered into history, people, sevices provided, etc.  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 place recognition, and virtual reality applications. The software will reside in the mobile device itself. |
| **Complexity** | |
| **Challenging problem and issues** | The student will learn virtual reality, machine learning and image analysis programming teachniques He/she also to master mobile and android programming. |
| **Related computer science fields and subfields** | Computer Graphics, Virtual reality, 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 |