**Thesis/Final Project Registration Form**

**Student(s) Personal Details:**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **First Name** | **Last Name** | **Father Name** | **Year** | **Semester** | **Supervisor** | **Project Duration** | **No of Students** |
| Ahmad zia | Yosefi | Hazratshah | 1398 | Spring | Rafiullah Momand | 2 semester | 2 |
| Mehreen | Najm | Sarajudine |

**Thesis/Final Project Details:**

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| Start of project (year-month-day) | 2019-04-17 | Expected date for completion | 2020-01-01 |

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| **Research Topic** | Towards a system to aid communication with Deaf |
| **Research Problem** | In our modern information and communication society, daily life would be unimaginable without technology. Information and Communications Technology (ICT) is also very useful for people with special needs.  Deaf are people who can’t talk and hear, hearing people are unfamiliar with Deaf because they don’t know their language. They think that if you cannot hear, you can easily access any necessary information by simply reading it in written form, and if you really need to communicate, you can always write your message down. [5]  But this system is not an efficient way to communicate, Deaf have their own language of communication (sign language), they can only understand this language and also they write and read Faster on sign writing.  According to survey in 2015, there are 121 “Deaf sign languages” in the world, but there is not such an efficient mechanism where Deaf can easily understand people thoughts.[3] |
| **Impact of the problem** | Deaf are losing their moral, and there is a huge gap between Deaf and ordinary people, they don’t know how to understand each other feelings and messages.  Deaf don’t have access to possibilities and opportunities as much as ordinary people.  Deaf can’t be able to make contribution in society. |
| **Research Goals** | We will suggest an efficient mechanism that Deaf can easily communicate with ordinary people to understand their thoughts.  As Deaf is a part of society and they need to make a connection with people around them. |
| **Research Questions** | 1. How our solution will reduce the gap between Deaf and people? 2. Which ways are convenient to include deaf in technology? 3. Which Models can be used to automate a system for communication between ordinary people and Deaf? |
| **Methodology** | Research methodology: during literature review we will work on the data that we have found to find a systematic way to help Deaf, then we will work on factors that can make our solution better. |
| Development Methodology: We will use agile methodology as our datasets are in progress, we will use some features and technologies like (TenserFlow, Game engine, Android development kit, Firebase and …).  After finding a perfect solution, we are going to gather the datasets, then we will train and test the system.  Second, we will work on animating of signs in case of how to react against of each letter or a word that ordinary people talk or write. |
| **Expected Outcomes** | We will have a brief analysis of deaf communication systems and we will suggest an effective mechanism that can be efficient in deaf communication.  We will describe how technology can facilitate this mechanism. |

**Work Plan:**

Semester 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activities** | Weeks | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Case Study |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data gathering |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Training the System (Tensor Flow) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Working on UI (Android) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Connecting android with Tensor Flow |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Testing the system |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Semester 2:

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activities** | Weeks | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Creating the character |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rigging and animating |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Connecting Game Engine with tensor flow |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fixing bags and Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| **References** | 1. *A Study of Notation and Sign Writing Systems for the Deaf. Mihoko Kato, Toyohashi University of Technology 2008* 2. *Andersson, Conny, et al. Assistive technology for the hearing-impaired, deaf and deafblind. Springer Science & Business Media, 2006.* 3. *Al-Fityani, Kinda, and Carol Padden. "Sign language geography in the Arab world." Sign languages: A Cambridge survey (2010): 433-450.* 4. *Hilzensauer, Marlene. "Information technology for deaf people." In Intelligent paradigms for assistive and preventive healthcare, pp. 183-206. Springer, Berlin, Heidelberg, 2006.* 5. *Maiorana-Basas, Michella, and Claudia M. Pagliaro. "Technology use among adults who are deaf and hard of hearing: A national survey." Journal of deaf studies and deaf education 19.3 (2014): 400-410.* |

**Declaration and Approval:**

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| --- | --- | --- | --- | --- |
| **Student(s)** | By signing this form, I confirm that   * all the statements above are correct * I have read and fully understand the examination regulations * I am not in the process of writing another thesis/final project in the same subject at another university/organization. | | | |
| Date: | Place: | Name(s) and Signature(s): | *Ahmad zia yosefi* |
| 2019-4-16 | Kabul, Afghanistan | *Mehreen Najm* |
| **Supervisor** | I hereby confirm that I will serve as supervisor for the below named thesis/final project: | | | |
| Date: | Place: | Signature: |  |
|  |  |
| **Department** | The prerequisites have been assessed and the student(s) can be registered for the thesis/final project described above. | | | |
| Date: | Place: | Signature: |  |
|  |  |

Submit completed form to Information Systems Department

Please contact the Administration Office if you have any questions

Receipt Date: Sign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_