Thesis Title: **Deep Neural Network Techniques for Low Resource Speech Recognition**

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# **Progress Report:**

The major aspects of my research have including a pilot study and a language model for Okrika language has been completed so far in the first three years of my studentship. While the first year was focused on reviewing relevant speech processing literature and defining a technical problem space, the second year reviewed various methodologies and techniques in the problem space. The third year up to the 20th of October, 2017 saw the realisation of the research aims and objectives, as well as the design methodology.

The methodology majorly implements Recurrent Neural Networks as can be applied to Generative Adversarial Networks in Language modelling and how such models can enhance Speech recognition in low resource constraints. So far, a publication based on the pilot study has been sent publication while a second paper detailing final implementation results is in the process of been completed to be submitted by the end of November 2017. With regards to laboratory work, I can say that more than 90% of the work has been done and the models will continue to be fine-tuned into the write up period. The final thesis will be submitted by December of 2018. A Gantt chart showing the progress plan of my research write-up for the academic year 2017-2018 is outlined below.

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| **Deep Neural Network Techniques for Low Resource Speech Recognition** | | | | | | | | | | | | | | |
| **NO** | **MILESTONE** | **ACADEMIC SESSION 2017-2018** | | | | | | | | | | | | |
|  | | ***October*** | ***November*** | ***December*** | ***January*** | ***February*** | ***March*** | ***April*** | ***May*** | ***June*** | ***July*** | ***August*** | ***September*** | ***October*** |
| **1** | Publication Paper |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **2** | Write up of Introduction chapter |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **3** | Write Up of Literature Review |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **4** | Write up of RNN Chapter |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **5** | Write up on GAN Chapter |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **6** | Writ-up on RNN-Language Models |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **7** | Discussion & Conclusion. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **8** | Future Direction Chapter. |  |  |  |  |  |  |  |  |  |  |  |  |  |

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