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| Student Name | Iyalla John Alamina |
| Type of Award | PhD |
| Date of Viva Examination | 9 June 2020 |

Please provide an overview of the examination, including a rationale for the recommended outcome. Any amendments that the student is required to make must be listed separately in the amendments table below.

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| This thesis presents an attempt to design an end-to-end speech model for automatic speech recognition of low resource languages. Some interesting preliminary results are demonstrated.  We examined the candidate for just over two hours, satisfying ourselves that the work reported in the thesis was indeed his own, and that the thesis had been written by him. He demonstrated a good grasp of his research area and associated areas of knowledge, and was able to engage with the examiners in technical debates about some aspects of the work.  We also questioned the candidate at length about the concerns raised in our preliminary reports. The most serious concerns regarded the limited scope of experimental studies and contributions to knowledge. Overall, the thesis partially demonstrates scholarship at the PhD level. The results presented only partially shows the ability of the candidate to implement research that results in new knowledge, resulting in original contributions in the discipline.  The viva exposed some omissions in the thesis (discussed in more detail below), which should be addressed to provide a holistic view of the work. Also, the thesis has an unacceptable number of typographical and grammatical errors which should be corrected.  The recommendation is “Referral to complete major amendments”.  For the amended thesis, please provide the following:   * An electronic copy of the original thesis * An electronic copy of the amended thesis, with the changes highlighted (e.g., in blue font). * A response document, providing a response to each point raised below. |

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| Table of Amendments/ Corrections Required Following Examination  Please ensure this is typed and not hand written and is a joint report of all examiners | |
| **Examiners’ comments** | **Student response** |
| Larger points (chapter 6):   * expand on data preparation (section 6.1) * expand on architecture design in section 6.2 and justify the design used * give full details of the design used * justify all hyperparameters used * provide results for all studies conducted (time, accuracies, etc) * discuss the results | Chapter 6  1. Data prepraration 6.1 extended including k-fold validation explanation, batch and sequence size selection.  2. Archiectue detailed and justifed (6.2)  3. Architecture hyperparameters (6.2) justified  4. Training results given in table 6.1  5. Results discussed in 6.5 |
| Larger points (chapter 7):   * provide full details of the models used * explain the process of designing the Bi-RNN model used * provide full details of the hardware used * complete the experiments in table 7.2 and provide the full results, comparative analysis, and discussion of the results * try the model on the low resource language as well and provide the results   replace figures 7.3 and 7.4 with appropriate figures of loss/accuracy curve | Chapter 7  1. Model details provided in 7.1 to 7.5  2. Bi-RNN Architecture given in 7.2  3. Hardware deatails provided (7.8)  4. Analysis of result done (7.8)  5. Low resource language (simulation - English,italian in Table 7.4)  6. Training losses Figure 7.3 and Figure 7.4 |
| Other points (abstract, all chapters, bibliography):   * Rewrite the abstract as discussed * Be consistent in using acronyms * Provide list of variables for all equations * Check the location of brackets for all inline citations * Revisit the caption for all figures * Sort out the bibliography * please fix all grammatical and typographical errors identified in the thesis, and please check carefully any new text added to the thesis. It is strongly recommended to have the thesis carefully proofread prior to resubmission. | Other points.  1. Quantitative results included in Abstract  2. Acronyms revised \*\*  3. List of variables added  4. Captions for figures revisited \*\*  5. Bibliography reformatted  6. Proof reading was done |
| Smaller points (chapter 1):   * Bottom of page 18; make it clear why English Language has been used * Section 1.5; rewrite aims and objectives as discussed * Page 20: make sure there is evidence in the thesis for the list of claims provided * Page 20: line 6 must be revised * Section 1.6: revise the contributions to knowledge once larger points listed above have been addressed * Provide research questions in this chapter | Chapter 1  1. Use of English language was justified  2. Aims and objectives aligned to research outcomes  3. |
| Smaller points (chapter 2):   * Revise the beginning of chapter 2 as discussed * Provide better resolution for figure 2.2 * Bottom of page 31; be consistent with the name of the language * Page 32; check the hat-swap or swap-hat * Page 34; explain AutoSegCriterion | Chapter 2  1. First paragraph revised  2. Figure 2.2 has been reproduced  3. Language name has been corrected  4. swap-hat replaced with hat-swap  5. AutoSeg\*\* criterion explained |
| Smaller points (chapter 3):   * Sections 3.1; make theses as assumptions only (not claims) * Discuss the knowledge gained in your conclusion chapter * Section 3.3.1: describe the signal data used * Provide details of all processing steps; adjustments, filtering, etc * Figure 3.1 must be refined * Section 3.4.1: provide details of the experiment | Chapter 3  1) Section 3.1 relabelled as assumptions  2) |
| Smaller points (chapters 4-5):   * Provide full details in caption for figure 4.1 * Check all equations in this chapter and make sure all variables have been introduced * Page 84; there is a gap | Chapter 4 and 5  1. Details of caption for figure 4.1  2. Variable list provided  3. Gap removed |
| Larger points (chapter 8):   * Please revise this chapter by providing a summary of your work and a brief discussion of the results; followed by suggested future work | Chapter 8  Revised with  a) Summary of the work  b) Discussion of results (8.2)  c) Suggested future work (8.3)  d) Conclusion (8.4) |