

LING6801: Introduction to Machine Translation Evaluation

Callaghan and Online
Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

The School of Humanities, Creative Industries and Social Sciences is committed to providing an inclusive environment in which all cultures are accorded respect and all students and staff are expected to act with honesty, fairness, trustworthiness and accountability in dealings with others. The School recognises and respects the unique histories and cultures of Aboriginal and Torres Strait Islander peoples, their unbroken relationship with the lands and the waters of Australia over millennia, and the validity of Aboriginal ways of knowing. We are dedicated to reconciliation and to offering opportunities for Aboriginal and Torres Strait Islander peoples to access and succeed in higher education.

OVERVIEW

Course Description

This course reviews the history and the fundamental mechanism of machine translation (automated translation by computer software) and discusses the role of human intervention for the evaluation of Machine Translation. Students will learn how recent technological developments have overcome some challenges in machine translation and what issues remain to be solved. They will identify general problems that require human interventions. Using real-world materials (e.g. university brochure for new students, guidebook for obtaining driving licence, app for online banking), students will compare the performance of existing automatic translation systems with Human translations of the same materials and identify the aspects that require improvement for clarity and cultural appropriateness.

Academic Progress Requirements

Nil

Contact Hours

Callaghan Lecture

Face to Face On Campus
2 hour(s) per week(s) for 12 week(s)

Online Activity

Online
2 hour(s) per week(s) for 12 week(s)

Online Lecture

Face to Face On Campus
2 hour(s) per week(s) for 12 week(s)

Online Activity

Online
2 hour(s) per week(s) for 12 week(s)

Unit Weighting

10

Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

www.newcastle.edu.au

CRICOS Provider 00109J

CONTACTS

Course Coordinator	Callaghan and Online A/Pr Kiwako Ito Kiwako.Ito@newcastle.edu.au (02) 4921 6109 Consultation: email to set up an appointment
Teaching Staff	Other teaching staff will be advised on the course Canvas site.
School Office	School of Humanities Creative Industries and Social Sciences Social Sciences Building Callaghan HCISS@newcastle.edu.au +61 4985 4500

SYLLABUS

Course Content	Topics to be covered include the following: <ul style="list-style-type: none">• general architecture of Machine Translation;• history of Machine Translation development;• roles of human evaluators: why Machine Translation needs human interventions; examining translations that are not contextually or culturally appropriate and lack naturalness• tasks of human evaluators: what Machine Translation evaluators have to do;• future of Machine Translation and roles of evaluators.
Course Learning Outcomes	On successful completion of this course, students will be able to: <ol style="list-style-type: none">1. Describe the basic architecture of Machine Translation;2. Explain the development of Machine Translation;3. Discuss the role of human evaluators of Machine Translation;4. Propose ways in which human evaluators can contribute to future Machine Translation development;5. Compare Machine Translation and human translations.
Course Materials	Reading materials will be posted on Canvas

SCHEDULE

Week	Week Begins	Topic	Readings	Learning Activity
1	26 Feb	How does MT work? History of MT	Review 2 articles on History of MT	Understanding weekly discussion activities
2	4 Mar	Types of MT • Rule/Example-based MT • Statistical MT • Neural MT and AI	A short article on modern MT types	Q&A on the discussion forum
3	11 Mar	How are the performance of MT tools evaluated? • Fidelity	A short article on Fidelity	Evaluating the fidelity of MT output
4	18 Mar	How are the performance of MT tools evaluated? • Comprehensibility	A short article on Comprehensibility	Evaluating the comprehensibility of MT output
5	25 Mar	How are the performance of MT tools evaluated?	Conference paper 1 on the effect of post-editing AI translation	building Evaluation protocol/system Lit.Review: History of MT and unsolved issues
6	1 Apr	How are the performance of MT tools evaluated? (NO CLASS on Mon)	Conference paper 2 on the effect of post-editing AI translation	Evaluation protocol/system cont'd
7	8 Apr	Summary: - How much human post-editing is required? - What particular fields still demand intensive (i.e., non-cost-effective) post-editing?	Discussion of the need for post-editing	Summary upload to Canvas Discussion Forum
Mid-Semester Recess				
Mid-Semester Recess				
8	29 Apr	Exploring MT as a tool: How do translators use MT?	Discussion on what human skills are needed for better performance of AI and better use of AI translation Research paper on the MT and human translator performance	Summary Chat GPT (or equivalent) performance
9	6 May	AI Translation: Status Quo and existing challenges	Working with AI: Guest Lecturer VideoTranslatorAI staff	Summary of a guest lecture
10	13 May	How can we use MT effectively as professional translators?	An online article on AI and translation profession	Weekly discussion reflecting the knowledge from reading
11	20 May	Transcreation for industry: How do you apply your cultural skills beyond mere translation	Transcreation: paper suggested by Magic-T Studio	Summary of a guest lecture
12	27 May	Summary: Human roles in MT and skills required to use MT as professional translator	Discussion on the changes in how human translators work in the future	Post summary to Canvas Discussion Forum
13	3 Jun			
Examination Period				
Examination Period				

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Literature Review	Week 5, 29 th March 11:59pm	Individual	40%	1, 2, 3, 5
2	Professional Task	After each guest lecture	Group	30%	3, 4, 5
3	Online Learning Activity	Fridays 11.59pm in weeks 1-7, 9 and 11-12	Individual	30% (10x3%)	1, 2, 3, 4, 5

Late Submissions The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Literature Review

Assessment Type	Literature Review
Purpose	Students demonstrate their basic understanding of how Machine Translation developed and what challenges necessitated what changes in approaches. They also need to identify the remaining challenges and their implications to the work of human translators.
Description	The essay must include two-part literature review: 1) Machine Translation architecture and history and 2) challenges of Machine Translation. The structure of the essay and detailed instructions will be provided as a separate document in class and on Canvas.
Weighting	40%
Length	Approximately 1200 words (3 pages, font size 12, double-spaced)
Due Date	Week 5, 29 th March 11:59pm
Submission Method	Online
Assessment Criteria	See Canvas for guidelines
Return Method	Online
Feedback Provided	Online

Assessment 2 - Professional Task

Assessment Type	Professional Task
Purpose	Students interact with industry partners to learn the current technological status and job structure.
Description	After each activity, students will write a short summary of activities, noticeable challenges, and solutions. This will involve three parts: 1. VideoTranslator AI: learn how to set parameters for AI translation and evaluate the performance of AI 2. Magic Studio: Translation of social media ads at two technical levels and evaluate your own performances. 3. Each student also submits a 2-page summary of their teamwork. The structure of the essay and detailed instructions will be provided in class and on Canvas.
Weighting	30%
Length	2000 words (600 words each for 1. and 2. and 800 words for teamwork summary)
Due Date	After each Guest Lecture
Submission Method	Online
Assessment Criteria	See Canvas for guidelines
Return Method	Not Returned
Feedback Provided	Online

Assessment 3 - Online Learning Activity

Assessment Type	Online Learning Activity
Purpose	Make weekly progress reports on the translation database and self-evaluate the individual learning with the week's activities
Description	Students will contribute to weekly online Discussion Board with the updated Excel Sheet for the target web translation. Detailed instructions will be provided in class and on Canvas.
Weighting	30% (10x3%)
Length	Approximately 1000 words (2-3 lines or approximately 100 words each week)
Due Date	Fridays 11.59pm in weeks 1-7, 9 and 11-12
Submission Method	Online
Assessment Criteria	Rubric provided on the Canvas course website.
Return Method	Not Returned
Feedback Provided	Online

ADDITIONAL INFORMATION

Grading Scheme This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct	<p>All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35 .</p>
Adverse Circumstances	<p>The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:</p> <ol style="list-style-type: none">1. the assessment item is a major assessment item; or2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;3. you are requesting a change of placement; or4. the course has a compulsory attendance requirement. <p>Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at: https://policies.newcastle.edu.au/document/view-current.php?id=236</p>
Important Policy Information	<p>The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures that support a safe and respectful environment at the University.</p>

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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