

Project Timeline (3 Months / 12 Weeks)

Week 1

- Finalize research topic, title, objectives
- Initial literature review on NMT, Transformers, Dzongkha segmentation
- Draft problem statement
- Meeting with guide: Project approval + feedback on scope

Week 2

- Continue detailed literature review
- Identify tools/frameworks (e.g., HuggingFace, OpenNMT, AdapterHub)
- Collect available Dzongkha-English parallel data
- Meeting with guide: Data-set feasibility + feedback on references

Week 3

- Begin implementation of Dzongkha word segmentation model (e.g., Bi-LSTM)
- Set up data preprocessing pipeline
- Apply Byte-Pair Encoding (BPE)
- Meeting with guide: Preprocessing and segmentation demo

Week 4

- Train and evaluate segmentation model
- Build baseline Transformer model (unidirectional)
- BLEU score testing
- Meeting with guide: Baseline translation results

Week 5

- Integrate segmentation into translation pipeline
- Switch to bidirectional model setup (English ↔ Dzongkha)
- Begin training on full parallel corpus
- Meeting with guide: Segmentation integration feedback

Week 6

- Explore AdapterHub or similar for fine-tuning with low resources
- Start integrating POS/morphological features (Factored NMT)
- Compare performance with baseline
- Meeting with guide: Adapter module plan

Week 7

- Continue training with linguistic adaptation
- Model tuning, error analysis

- Set up basic UI/API for testing (e.g., streamlit, Flask)
- Meeting with guide: Adaptation results discussion

Week 8

- Implement real-time optimization (quantization, model compression)
- Evaluate BLEU, latency, qualitative translations
- Begin drafting results and evaluation chapter
- Meeting with guide: Performance evaluation review

Week 9

- Test deployment environment (laptop/server)
- Conduct usability tests with sample users
- Final model tuning
- Meeting with guide: UI/real-time system check-in

Week 10

- Write methodology and implementation sections of report
- Generate charts, tables for results
- Start conclusion and future work
- Meeting with guide: Draft thesis sections review

Week 11

- Complete final report writing
- Format references, appendices
- Prepare project presentation slides
- Meeting with guide: Full thesis + feedback round

Week 12

- Final edits and proofreading
- Submit project report
- Final defense/presentation practice
- Final meeting with guide: Project closure and defense readiness

Weekly Guide Meetings

- Regular weekly check-ins (in person or online) with Guide.
- Share progress updates, roadblocks, and get approval for each stage