

**>>> TEACHING NLP THROUGH TAWHIDIC LENS:
>>> TOWARDS BRIDGING FAITH, LANGUAGE AND TECHNOLOGY**

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The Tawhidic Epistemology: Unity in Knowledge and Meaning

Natural Language Processing (NLP) seeks to model and process human language, mirroring the Qur'anic emphasis on communication as a divine gift as described in Surah Ar-Rahman (3:4): "He created the human being; He taught him speech".

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The Tawhidic worldview emphasizes unity, coherence, and purpose in all branches of knowledge. This worldview integrates reason ('aql), revelation (wahy), and the senses (hiss) within a purposeful moral framework.

Tawhidic epistemology offers a holistic perspective that views language as more than just data or human constructs. Through this lens, NLP becomes not merely a computational object or model, but a means to understand and nurture human communication in the service of truth (haqq), justice ('adl), and compassion (rahmah).

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The Qur'an and Sunnah illustrate how mastery of language strengthens community, diplomacy, and knowledge transfer.

A timeless example is Zayd ibn Thabit (RA), who learned Hebrew in just two weeks to assist the Prophet ﷺ in official correspondence while safeguarding the Muslim community and fostering intercultural understanding. His commitment exemplifies purposeful learning and service.



NLP and the Tawhidic Worldview

NLP Interdisciplinary Research

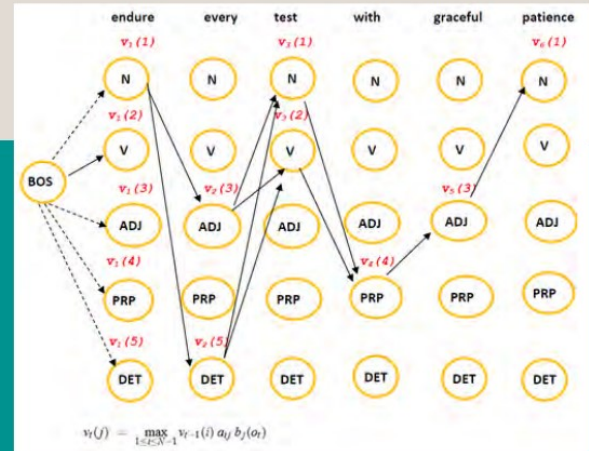
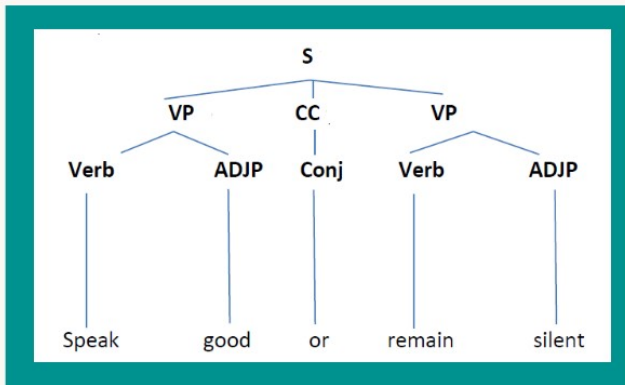
Research work in NLP addresses real social and spiritual needs such as preserving endangered languages, enriching Qur'anic accessibility, and enhancing interfaith dialogue.

Tawhidic epistemology inspires NLP interdisciplinary research connecting computer science, linguistics, and Qur'anic studies that respects meaning beyond mechanics while fostering a balanced pedagogy that unites intellect ('aql) and spirit (ruh).

Quranic Verses and NLP Tasks

Studying Sentence Parsing and Machine Translation (MT) through the lens of Tawhidic epistemology encourage students to learn and appreciate the Qur'anic linguistic precision and reflections.

The analysis of the structure and rhythm of Qur'anic recitation (*tajweed*) reflect sequential patterns that parallel computational models like Hidden Markov Models (HMMs) and Finite State Transducers (FSTs).



These frameworks capture transitions between linguistic states, echoing how the Qur'an maintains balance and order in its revelation.

In Sentiment Analysis, we seek to identify emotions, opinions, and attitudes expressed in text, classifying them as positive, negative, or neutral. From a Tawhidic epistemological perspective, emotion ('atf) is not a random or trivial aspect of language; it is a reflection of the human soul (nafs) and heart (qalb) that must be understood ethically: "Are they truthful (*sidq*)? Do they promote goodness (*ihsan*) or harm (*fasad*)?"

Thus, when designing sentiment analysis models, Muslim researchers can move beyond polarity detection to ethical sentiment interpretation, by distinguishing between expressions that uplift or degrade human dignity, fostering positive digital discourse rather than manipulation or polarization. Thus, sentiment analysis under *Tawhidic* principles becomes an act of moral discernment (*furqan*), recognizing the spiritual responsibility in processing human emotion.

The Principle of Order and the Concept of Zakah in Language Models

Language modeling, which predicts the next word or sequence in a sentence, reflects the structured coherence inherent in human communication. Through Language Models (LM), learners reflect on how language expresses human innate disposition (*fitrah*). From a Tawhidic perspective, this order mirrors the divine principle of *mizan*; balance and proportion in language creation and speech. Human language is known to follow patterned sequences of meaning and logic.

The use of smoothing techniques in language modeling to address the problem of data sparsity, aligns with the concept of zakah, "Take (with consent) from the rich (seen n-grams) and distribute to the poor (unseen n-grams)." Just as zakah purifies wealth and maintains social equilibrium, smoothing redistributes probability mass from seen to unseen events ensuring no element is neglected.

This concept provides a meaningful analogy that reflects how Islamic values can illuminate even technical aspects of machine learning, grounding computational reasoning in moral and spiritual insights, in contrast with the popular western analogy of Zorro; "Rob from the rich and distribute to the poor."

Towards a Faith-Driven Digital Future

Conventional NLP education focuses on algorithms, models, and data pipelines. A Tawhidic approach reframes these components with awareness of moral accountability and divine guidance.

As AI continues to shape communication and cognition, the Tawhidic paradigm ensures that technological progress remains ethically anchored. Teaching NLP through this lens produces graduates who are not only technically skilled but also spiritually conscious; graduates that view coding and computation as acts of ibadah when done with sincerity, justice, and purpose. These values inspire learners to explore beyond syntax and semantics to understand how language shapes thought, culture, and community. .

The convergence of faith, language, and technology reminds us that every algorithm, every word, and every model can reflect divine unity and purpose, just as the Qur'an calls believers to engage in tafakkur (deep reflection) and tadabbur (contemplation):

أَفَلَا يَتَذَكَّرُونَ الْفُرْعَانَ. وَلَوْ كَانَ مِنْ عِنْدِ غَيْرِ اللَّهِ لَوَجَدُوا فِيهِ اخْتِلَافًا كَثِيرًا

"Do they not reflect upon the Qur'an? If it had been from [any] other than Allah, they would have found within it much contradiction"

- Surah An-Nisa (4:82) -

