The Quranic Arabic Corpus
http://corpus.quran.com

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Publications
RANLP 2009 INFOS 2010 LREC 2010
The Quran
- 1,400 years old
- The central religious text of Islam
- Written in Quranic Arabic, the direct ancestor language of Modern Arabic
- Highly studied linguistically for over 1,000 years
- Large body of existing published analyses of the Quran, but these are not machine-readable

The Quranic Arabic Corpus
- An international project involving researchers from several institutions
- Aim is to enable further understanding of the Quran through annotation
- Produce highly accurate machine-readable datasets of linguistic analysis

Multi-Level Annotation
- Word-by-word English to Arabic interlinear translation
- Part-of-speech tagging
- Morphological segmentation and inflection features
- Syntactic analysis using dependency grammar
http://corpus.quran.com

- A popular website (50,000 users per month)
- Used by researchers, scholars and students of the Quran and Arabic

**Online Collaborative Annotation**
- Anyone can view existing annotation
- Registered users can suggest corrections through a message board

**Web-based Tools for Annotators and Researchers**
- Concordance of the Quran (to see how related words have been tagged)
- Morphological search by root, lemma or stem
- 7 parallel translations into English for each verse
- Automatically generated phonetic transcription
- Natural language generation used to create grammatical summaries
- Audio recitation in Arabic
<table>
<thead>
<tr>
<th>Translation</th>
<th>Arabic word</th>
<th>Syntax and morphology</th>
</tr>
</thead>
<tbody>
<tr>
<td>(97:1.1) Indeed, We</td>
<td>أَنْ نَحْكُمَ</td>
<td>ACC - accusative particle</td>
</tr>
<tr>
<td>ِّنَا</td>
<td>PRON - 1st person plural object pronoun → Allah</td>
<td></td>
</tr>
<tr>
<td>&gt;&gt;&gt;</td>
<td>V - 1st person masculine plural (form IV) perfect verb</td>
<td></td>
</tr>
<tr>
<td>(97:1.2) revealed it</td>
<td>أَنْزَلْنَا</td>
<td>PRON - subject pronoun → Allah</td>
</tr>
<tr>
<td></td>
<td>﴿‌‍َنَحْكُمَ</td>
<td>PRON - 3rd person masculine singular object pronoun → Quran</td>
</tr>
<tr>
<td></td>
<td>فَنَحْكُمَ وَذَٰلِكَ</td>
<td>في محل نصب منفصل في محل رفع فعل وانتهاء صيغة منفصل</td>
</tr>
<tr>
<td></td>
<td>صَيْرَ مَنْصَلَ</td>
<td>في محل نصب مفعول به</td>
</tr>
<tr>
<td>(97:1.3) in</td>
<td>﴿‌‍َنَحْكُمَ</td>
<td>P - preposition</td>
</tr>
<tr>
<td></td>
<td>﴿‌‍َنَحْكُمَ</td>
<td>حرف غير</td>
</tr>
<tr>
<td></td>
<td>لَيلَةٍ</td>
<td>N - genitive feminine noun → Night of Decree</td>
</tr>
<tr>
<td>(97:1.4) (the) Night</td>
<td>لَيْلَةٍ</td>
<td>اسم مجرور</td>
</tr>
<tr>
<td></td>
<td>lāyli</td>
<td></td>
</tr>
<tr>
<td>(97:1.5) (of) Power.</td>
<td>﴿‌‍َنَحْكُمَ</td>
<td>N - genitive masculine noun</td>
</tr>
<tr>
<td></td>
<td>أَلْقَادْرِ</td>
<td>اسم مجرور</td>
</tr>
<tr>
<td></td>
<td>l-quadri</td>
<td></td>
</tr>
</tbody>
</table>
Quranic Grammar - Word (97:1:2)

The second word of verse (97:1) is divided into 3 morphological segments. A verb, subject pronoun and object pronoun. The form IV perfect verb (فعل ماض) is first person masculine plural. The verb's root is رَنَزَ لَهُم (n-z-l). The suffix (ـه) is an attached subject pronoun. The attached object pronoun is third person masculine singular.

Chapter (97) sūrat 1-qadr (The Night of Decree)

(97:1.2)
revelled it
azīnānu

أُنْذِرْنَا

V - 1st person masculine plural (form IV) perfect verb
PRON - subject pronoun → Allah
PRON - 3rd person masculine singular object pronoun → Quran

See Also

- Verbs, Subjects and Objects
- Dependency Graph - visual syntax (Yāb) for this verse
- Concordance - list occurrence of this word
- Allah - referred to by the subject pronoun
- Quran - referred to by the object pronoun

3 messages

Samir
11th January, 2020
I suggest:
"V - 1st person plural (form IV) perfect verb"

It's not 'masculine', there's no gender in the first person (either pl. or sing.).
Online Volunteer Collaboration

- 50,000 Users per month
- 150 Researchers on the comp-quran mailing list
- Hundreds of online expert volunteers (Quranic Scholars)
Annotating the Quran
- 77,430 words in the Quran
- Each word is part-of-speech tagged, with morphological analysis
- This is initially done off-line, using a morphological analyzer
- Adapted BAMA (Buckwalter Morphological Analyzer)
- Approx 80% accurate

Difficulties in Adapting BAMA
- Quran uses different spelling compared to Modern Arabic
- Out of vocabulary errors
- BAMA does not use context – multiple possible analyses

Solutions
- Diacritic edit-distance, to find best match
- Initial off-line manual verification
- Filtering of BAMA results based on contextual grammatical rules
Syntactic Treebank
- Dependency Grammar (11,000 words completed so far)

Chapter (97) sūrat l-qadr (The Night of Decree)
Novel Contributions of this Research
- NLP and Corpus Linguistics applied to Classical Arabic
- Arabic language processing tools
- Datasets for Further Research
- Methodology - Large-scale online collaborative annotation

Future Work
- Pronoun resolution (in progress, 11,000 words annotated so far)
- Semantic ontology (in progress, 300 concepts defined with relations)
- Quranic PropBank (planned)

Applications
- A popular and unique free online Quranic Arabic study tool
- Datasets enable further automatic computational analysis of the Quran
- Training data for morphological analyzers and parsers for Classical Arabic
Thank You

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