Talking in French Like an Academia

Machine Learning Powered verlan Identification

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Abstract

something.

1 Introduction

1.1 Context and Motivation

Since the early 19th century, the French people have started to talk using verlan. Just like Pig Latin[1] exists in English culture, verlan is an unusual and creative form of *argot* (slang) that is formed by flipping the syllables around in a word.[2][1, 2] Time flies, verlan has become more and more popular, and it is now widely used amongst teens and young people in francophone societies[3][3]. Examples of verlan can be as follows:

- bite = bi + te → te + bi → tebie (penis)

- shit = shi + t → t + shi → teuchi[3]

- bonjour = bon + jour → jour + bon → jourbon (greetings)

In real-life conversations, such can be used as in the example sentences below:

- *Le graff géant représente une tebie pixel art.*
  (The giant graffiti depicts a pixel art penis.)

- *Il a du bon teuchi du bled.*
  (He's got some good shit from the countryside.)

- *Un p'tit[4] jourbon et tout le monde sourit.*
  (A quick hello and everyone smiles.)

Indeed, verlan can be formed with different original languages, not only French, but also English and other languages. However, it always follows the same rule of flipping syllables, although, for better pronunciation reasons, certain minor amendments such as dropping unnecessary letters and applying accents (e.g., é, è) can be used from time to time[1]. Besides, due to the

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[1] en.wikipedia.org/wiki/Pig_Latin
[2] In fact, the word *verlan* is a verlan from the word *l'inver* (the inversion).
[3] Such as France, Belgium, Switzerland, Luxembourg, and Canada.
[4] Standard spelling: petit.

universal trait of slang being used more often phonetically instead of written, verlan users tend to spell them differently when writing them down. As technology develops, this has been occurring more frequently than ever in daily texting[4].

Thinking internationally, when people are communicating with translators, it is possible that slang in their mother language can be brought to the conversation, which could be tricky for translators to translate[5]. Using translators such as DeepL[5] and Google Translate[6] to translate sentences that contain verlan from French to English can be a specific example to prove this. Furthermore, although both of the translators above are using Machine Learning (ML) for translation, their results of translating verlans are not ideal[6, 7]. For example, when attempting to translate the sentence above, *Le graff géant représente une tebie pixel art.*, both Google Translate1 and DeepL2 cannot translate the word *tebie* correctly. Specifically, for DeepL, there is no desired translation as *penis* in its alternative word list for *tebie3*.
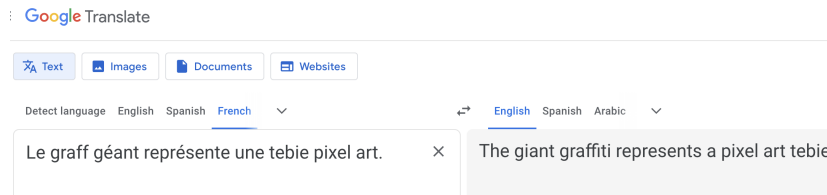

Figure 1: Google Translate cannot translate the verlan *tebie* correctly.
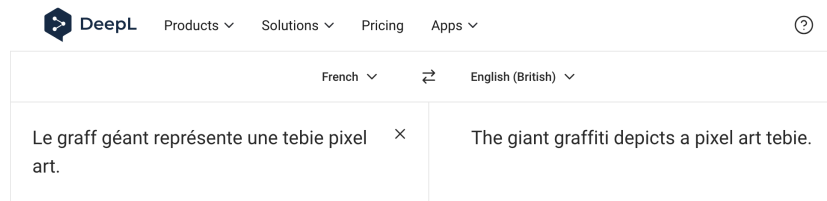

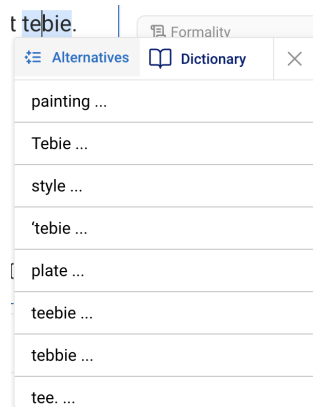Figure 2: DeepL cannot translate the verlan *tebie* correctly.

Figure 3: No desired translation for verlan *tebie* in DeepL's alternative word list.

Thus, a question shall naturally arise: Can we improve translators' performance in translating slang by improving the ML model? The answer is undoubtedly 'yes' in an era where artificial intelligence research is expanding rapidly. Researchers have been making progress in identifying slang using ML[13] and, moreover, in translating noisy text, of which slang is a part[8].

But what about verlan? There is no known ongoing or completed research on identifying *such* slang or their translations[7], nor does a proper dataset exist. The only work similar to this is an assignment published at the University of Toronto[8], asking students to train a Neural Machine Translation (NMT) model to transform standard English into Pig Latin. It is not only the other way around; instead of identifying Pig Latin and transforming it back to standard English, it is also more of an example for students to practice using NMT than a discussion on its identification and translation. Shouldn't we do something?

This report aims to change that.

1.2 Objective

The purpose of the project is to create two verlan datasets: one functioning as a dictionary, containing the verlan words and their normalised standard French equivalents; the other a dataset of sentences that contain verlan,

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[7]Until September 2025.
[8]https://uoft-csc413.github.io/2022/assets/assignments/PA03.pdf

paired with the same sentences containing normalised words, with labels indicating whether a sentence contains verlan. After that, the project embeds and classifies verlan using Large Language Models (LLMs) and analyses the results.
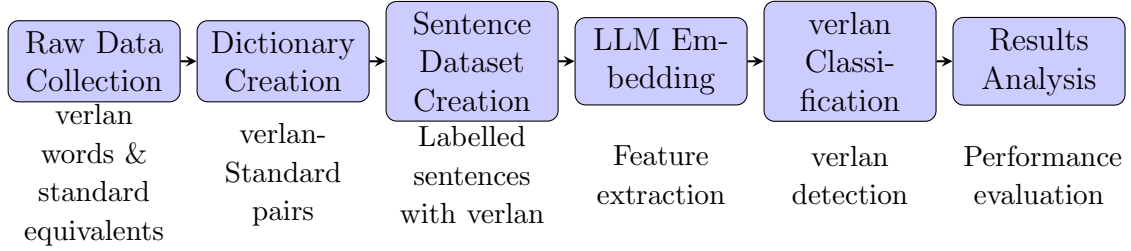

Figure 4: A visulisation of the objectives.

With the purpose above, the report contributes to the linguistics and the AI researchers two verlan datasets, for dictionary making or LLMs training. The report also evaluates how good we can achieve the identification of verlan with ML, to benefit machine translation in the future.

The code and the unannotated, un peer-reviewed dataset developed as part of the project are released under openlicences and aligns with open science best practices, with the usage of a version controlled software development platform (GitHub)[9]. The annotated, peer-reviewed dataset will be published shortly after this report, aiming by the end of 2025.

2 Background

2.1 A Living Verlan

Vivienne Véla, a former scholar from Université Paris 8, poetically captured one of Verlan's most important traits: it pursues confusion instead of clarity[21]. One reason is that it is widely used among lower-class people, drug users, gangs, or those in jail. Thus, making the context unidentifiable is important — certain phenomena such as reverlanisation (flipping the Verlan again if it becomes too popular) and truncation are therefore applied.

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[9]github.com/greateden/verlan-Identification-Normalisation

However, although Verlan is used for concealing meaning, it still follows certain rules. The most general rule is syllabic reversal, as mentioned in the introduction chapter of this report.

Specifically, to delve into the linguistic rules, Véla pointed out that the analytic model proposed by Kaye and Lowenstamm provides the best description[22]. The syllable can be disassembled into *attaque* (onset), *rime* (rhyme), *noyau* (nucleus), and *coda*. For example, here is a representation of the word *garder*, IPA[10] [garde].
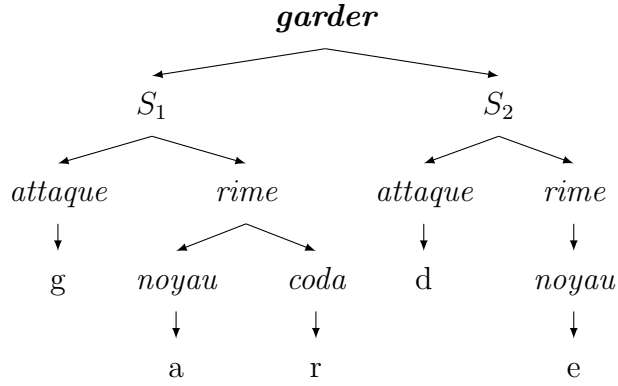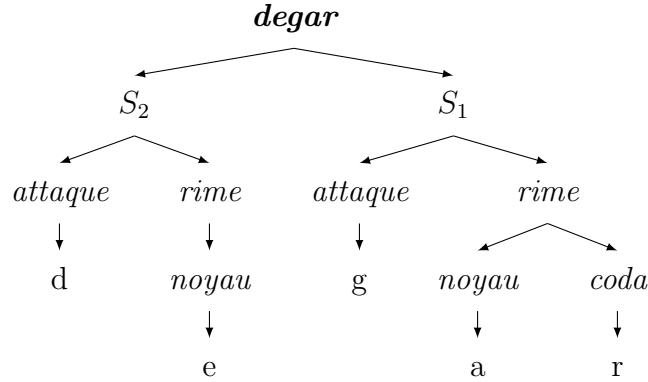

It has two syllables, S_1 and S_2. To create the Verlan form, we follow the permutation equation below:

$$(S_1 S_2) \rightarrow (S_2 S_1) \tag{1}$$

After the permutation, we obtain the Verlan form of *garder* as *degar*, represented below.

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[10]International Phonetic Alphabet, https://en.wikipedia.org/wiki/International_Phonetic_Alphabet

degar

S_2 S_1

attaque   *rime*   *attaque*   *rime*

d   *noyau*   g   *noyau*   *coda*

e   a   r

Notably, the permutation occurs only at the syllable level (i.e., between S_1 and S_2); it does not affect the internal structure of each syllable tree, although in some cases, certain consonants (such as e) might be dropped after permutation. That said, the example above is not an exhaustive explanation of forming a Verlan. To avoid confusing the readers, this report believes that this example perfectly illustrates its regular rule. For further details, readers are advised to consult Véla's paper.

With such a sub-word permutation, researchers can not only discuss it within the linguistic realm, but it is also intriguing for computer scientists to explore how machines, such as LLMs, perceive this kind of difference. Just as Véla describes Verlan — ambiguous, sometimes violent, sometimes amazing, and always vivid.

2.2 Detecting Slang

To the best of our knowledge, there is no existing computational research[11] on the *detection* of Verlan — this particular form of French slang. However, there are a few scholars who have included Verlan in their research[9, 10, 11, 12]. Yet, these studies commonly included Verlan as a type of slang in their dataset or corpus. Moreover, they did not specifically focus on how to detect this particular type of slang, but rather approached it in a broader sense — they created slang datasets that contain Verlan, and some of them employed computational approaches to detect such slang.

Fortunately, there are several papers related to computational slang detection, and their approaches could contribute to Verlan detection to a large

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[11]As of September 2025.

extent[13, 14, 15, 18]. These studies are not limited to French but also cover other Indo-European languages[12].

Therefore, regarding the history of Verlan detection, this report first generalises the task as slang detection, constructed based on the background chapter of a slang detection paper[13]. After each key historical point, there will be discussions related to theoretical ways to implement those methods for Verlan detection, in order to provide readers with a general and useful background.

2.2.1 Dictionary Search

The easiest way we can think of is to use a dictionary — just like how we look up a word that we do not know. The pros and cons are highly similar to consulting a dictionary. It is fast (if using a digital one) and accurate. On the other hand, because it is purely fixed data, it only works with existing words, thus it cannot identify newly invented ones.

Examples of existing slang dictionaries include SlangNet, SlangSD, and SLANGZY[17, 18, 19]. As for French slang dictionaries, we have, for example, *Dictionnaire du chilleur*[20]. Specifically for Verlan, the report can find several dictionaries online, including *Dictionnaire Interactif du Verlan*[13], Wiktionary[14], and *Dictionnaire Verlan*[15].

With these existing dictionaries, implementing a tool to identify Verlan should be straightforward. However, two major issues limit the possibility of directly using these dictionaries for Verlan identification: they lack comprehensive coverage, and some of them are fan-made, which neither captures the full extent of this slang nor guarantees accuracy. Requesting copyrights for certain dictionaries could also be a potential concern.

Although dictionaries have the drawbacks mentioned above, they remain essential resources for implementing LLM-based approaches, as discussed later.

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[12]For example, English, German, and Russian. For more information, please refer to: https://en.wikipedia.org/wiki/Indo-European_languages.

[13]https://ecoleng.com/verlan-comprendre-argot-francais-parler/dictionnaire-interactif-du-verlan

[14]https://en.wiktionary.org/wiki/Category%3AVerlan

[15]https://zlang.fandom.com/fr/wiki/Dictionnaire_Verlan

2.2.2 Traditional ML

3 LaTeX markup examples

3.1 Sections

Use `\section{}` and `subsection{}` commands to organise your document. LaTeX handles all the formatting and numbering automatically. Use `\label{}` and `\ref{}` commands for cross-references.

3.2 Comments

Comments might be useful during the writing process, as reminders or questions to your supervisor (who should get a chance to comment on your report). Comments can be added to the margins of the document using the `\todo{}` command, as shown in the example on the right. You can also add inline comments:

> This is an inline comment.

Here's a comment in the margin!

3.3 Tables and Figures

Use the `table{}` and `\tabular{}` commands for basic tables — see Table **??**, for example. You can include a figure (JPEG, PNG or PDF) with the `\includegraphics{}` command as in the code for Figure **??** below.

3.4 Mathematics

LaTeX is great at typesetting mathematics. Let $X_1, X_2, \ldots, X_n$ be a sequence of independent and identically distributed random variables with $\mathrm{E}[X_i] = \mu$ and $\mathrm{Var}[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \cdots + X_n}{n} = \frac{1}{n}\sum_{i}^{n} X_i \tag{2}$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$. You can also reference labeled equations, such as Equation 2.

3.5   Lists

You can make lists with automatic numbering . . .

1. Like this,

2. and like this.

. . . or bullet points . . .

- Like this,

- and like this.

4   Conclusion

Concluding remarks. Send the pdf (not the `*.tex` file) to your supervisor for comments (as early as possible). Don't forget to change the `\usepackage[draft]{cosc4x0style}` setting to `\usepackage{cosc4x0style}` to produce the pdf in the format for the final submission.

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Appendix A   Some extra things

If you have anything more to add such as:

- not essential details - things that might be too much for first time reading, or could be distracting from the main points...but are still important for reproducibility or deeper understanding

- work that was done in the project but doesn't go with the main work, or detracts/is not essential for the main narrative.

Appendix B   Aims and Objectives

Interim report only! – you do not need to include this appendix in the final report. However, in your interim the last appendix should include your original Aims and Objectives, and, if the things have changed, the revised Aims and Objectives. If you used the LaTeX template provided for your Aims and objectives document, just copy the \paragraph{Aims} and \paragraph{Objectives} sections and paste them here.

Original

Aims   Here you are describing the term goal of the project. What do you want to achieve by the end? What is the ultimate goal of this work? For

example, the primary aim of this document is to have students produce suitable aims and objectives for their COSC480/490 project. While the aims and objectives document is not an assessed deliverable, a clear definition of what is to be done, and a bit of planning of how it is to be accomplished is paramount to the project's success. It is important to establish the scope of the project.

Objectives   Objectives list the milestones that you need to achieve in order to achieve the projects aim(s). It's a rough plan for what needs to happen in what order. It's best to list the objectives in bullet point form. For many projects the structure to these objectives might follow the following pattern (objective names are just examples – you can have different objective names):

- background reading; going through the literature; learning about the research field;
- setting up of some kind of system for the project; getting the environment for experiments working;
- conducting preliminary experiments; implementation of a basic/simple approach; producing base case results;
- trying method 1; recording the results;
- trying method 2; recording the results.

Revised

Aims   Here you are describing the term goal of the project. What do you want to achieve by the end? What is the ultimate goal of this work? For example, the primary aim of this document is to have students produce suitable aims and objectives for their COSC480/490 project. While the aims and objectives document is not an assessed deliverable, a clear definition of what is to be done, and a bit of planning of how it is to be accomplished is paramount to the project's success. It is important to establish the scope of the project.

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