Artigas

Processamento de Linguagem Natural

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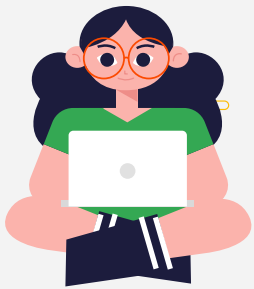
Buscar



Universidade Estadual de Maringá
Introdução à Inteligência Artificial - Informática
Prof. Dr. Wagner Igarashi
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Road Map

1. Introdução
2. Fundamentação
3. Desenvolvimento
4. Demonstração
5. Dificuldades
6. Conclusão

1

Introdução

Introdução😎

Problema proposto:

Implementar um software que execute as seguintes ações:

- Ler arquivos PDF de um diretório.
- Utilizando uma biblioteca de leitura PDF, realizar o pré-processamento de texto.
- Extrair as referências.
- Identificar o Objetivo, Problema, Metodologia e Contribuição.
- Utilizar modelos de linguagem como bag-of-words, n-grama, etc.
- Identificar 10 termos mais citados no artigo (desconsiderando as referências).
- Salvar os dados extraídos em arquivo.
- Criar uma interface de busca para listar os artigos em ordem utilizando o cálculo de BM25.

2

Fundamentação

Fundamentação📝

Processamento de Linguagem Natural (PLN)

- Desenvolvimento de algoritmos e técnicas para permitir que os computadores compreendam, interpretem e gerem linguagem humana de forma natural.
- Um problema comum é a ambiguidade da linguagem, onde uma mesma palavra ou frase pode ter diferentes significados dependendo do contexto.
- Modelos de linguagem pré-treinados.
- Análise sintática e semântica.
- Extração de informações.

3

Desenvolvimento

Desenvolvimento 💻

Metodologia

Para este trabalho, escolhemos os artigos da seguinte forma:

- 10 sobre Web Development
- 10 sobre Data Science

Desenvolvimento 💻

***Abstract*—Progressive Web application (PWA) is a rapidly emerging technology that aims to provide an intermediate between native applications and web applications. PWAs provide certain advantages over traditional web applications, making them easier and faster to build compared to native applications. This paper discusses the PWA methodology, its advantages, and applications in detail. It also compares PWA with native and website application developments and presents PWA as an effective method for rapid prototyping. This study uses an app developed for security guards at a university for identification and verification purposes to support the claims and demonstrate the strengths of PWA.**

***Index Terms*—Progressive Web applications, product development, user testing, mobile application development, entrepreneurship, software development lifecycle**

I. Introduction

The traditional method of launching a mobile-based application into the market uses native applications. The native applications are available on the App Store or Play Store and are installed on devices for development and testing compare it with traditional development approaches and give a experimental analysis of advantages with application development with PWA. The claims in this study are supported and validated using an application developed using PWA that aims at identification and verifications of students at the security gates of a university campus.

The paper is organized as follows: Section I introduces the paper. Section II describes the literature survey of progressive web applications. Section III offers a new methodology that reduces the time required for testing of mobile applications using PWAs. Section IV describes the advantages of PWAs over Native applications in the context of rapid prototyping, while section V describes its advantages over web applications. Section VI presents the experimental results of PWA testing testing and finally, section VII concludes the paper.

II. Literature Survey

Researchers have been studying and practising more effective ways of software development. PWA is one of the

Desenvolvimento 💻

profound in the entire process.

7) **Instability** Makes it easier for the students to use than a website as it can be easily opened directly from the home screen without much effort.

8) **Offline performance** enabled students to use the application without the requirement of connectivity.

In the above case study, progressive web applications played a vital role in the development of the digital Identity Card Portal. The PWA prototype has enabled the testing of the idea into a small sector of the university. This can be scaled up gradually and the results of its performance can be incorporated in the future versions of the product. A/B testing can be performed easily on various students to find out what they exactly need and improve the product. All of these activities would have taken more resources in terms on time and computations had it been a native or a web-only application.

Based on these experimental experiences, it can be concan be studied in the context of PWA applications. Awareness of this methodology needs to be done in startups. Lastly, process metrics need to be established for this methodology.

References

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[2] How fast is pwa? check this pwa demo to figure it out - tigren. https://www.tigren.com/blog/pwa-demo/. (Accessed on 05/10/2023).

[3] Hybrid, native, and pwas: Testing your mobile apps for compatibility. https://www.browserstack.com/blog/hybrid-native-pwas-testing-your-mobile-apps-for-compatibility/. (Accessed on 05/10/2023).

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[5] Progressive web apps: Escaping tabs without losing our soul — by alex russell — medium. https://medium.com/@slightlylate/progressive-apps-escaping-tabs-without-losing-our-soul-3b93a8561955. (Accessed on 05/10/2023).

[6] Progressive web apps on ios are here — by maximiliano firtman (firt.dev) — medium. https://medium.com/@firt/progressive-web-apps-on-ios-are-here-d00430dee3a7. (Accessed on 05/10/2023).

Desenvolvimento 💻

Metodologia

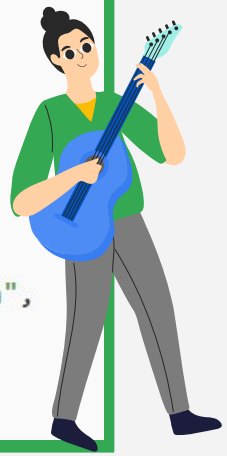
Separamos cada parte do documento da seguinte forma:

- Abstract e Introdução. (A)
- Documento. (B)
- Referências. (C)

Desenvolvimento 💻

No conjunto A buscamos o objetivo utilizando as palavras-chave:

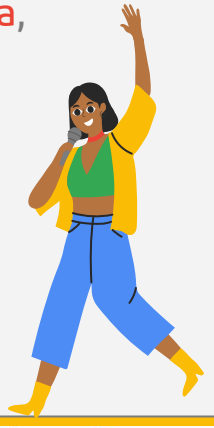
```
key_words = [
    "objective",
    "the purpose",
    "aim", "goal",
    "research question",
    "intention", "motivation",
    "mission", "this study",
    "this paper", "this research",
    "this article", "this work",
    "investigative goal",
]
```



Desenvolvimento 💻

No conjunto B buscamos a metodologia, problema e contribuição utilizando as seguintes palavras-chave:

```
key_words = [
    'methodology',
    'methodologies',
    'method',
    'interviews',
    'survey',
    'content',
    'analysis',
    ]
```



```
key_words = [
    "problem", "issue",
    "challenge", "difficulty",
    "obstacle", "barrier",
    "trouble", "hurdle",
    "dilemma", "predicament",
    "quandary", "impasse",
    "puzzle", "enigma",
    "mystery", "riddle",
    "question", "conundrum",
    "headache", "stumbling block",
    "thorn in one's side"
]
```

```
key_words = [
    "contribution",
    "contribute",
    "contributes"
]
```

Desenvolvimento 💻

Resumindo

Basicamente buscar um conjunto de palavras-chave relacionadas ao tópico em cada sentença do texto e armazenar em um *array*👍

Artigas

4

Demonstração

M T W T F

Demonstração 👌

Artigas

5

Dificuldades

M T W T F

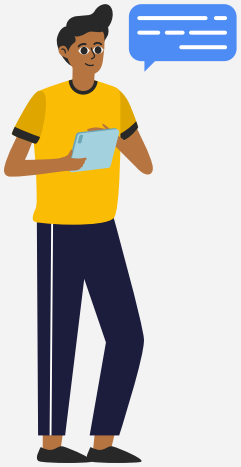
Dificuldades😨

- Não extrai todos os requisitos.
- Depende da estrutura do artigo.
- Não separa cabeçalho e rodapé.
- Pré-processamento utilizado só para bag-of-words.
- Referências em uma única string.

6

Conclusão

Conclusão🐱(✿´◡`✿) (*/ω＼*)



- Abordagem simples, eficiência simples.
- Utilizar de algum analisador semântico para descartar sentenças.
- Python possui boas ferramentas para auxiliar.
- Contribuição não foi achado em nenhum artigo.
- Aprendemos mais sobre técnicas de PLN.

Bibliografia🤓

- RUSSELL, Stuart J.; NORVIG, Peter. (2009). Artificial Intelligence: A Modern Approach. Prentice Hall, 3a Edição, 2009.
- Introdução ao Processamento de Linguagem Natural — Natural Language Processing(NLP) | by Nina Maria Pinheiro | Data Hackers | Medium
- Guia Completo de Python para Processamento de Linguagem Natural Em Pdf (awari.com.br)
- NLTK :: Natural Language Toolkit
- Como criar APIs em Python usando FastAPI | Alura
- Slides do Prof. Dr. Wagner Igarashi

Obrigado

Dúvidas?

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