

Deep Learning for Text Analysis

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INTERSECT
RESEARCH FASTER





- National Digital Research Organisation
- Not-for Profit
- Membership Based and Founded by Universities



48 staff
nationwide

Physical presence in
NSW, SA, VIC, ACT

Established in 2008

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Australian Research Data Commons

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Case Study



Objective: Understanding perceptions on essential worker housing in regional Australia



In total, 32 stakeholders were interviewed



Semi-structured interviews were used, offering a balance of structure for comprehensive evaluation and the flexibility for spontaneous assessment



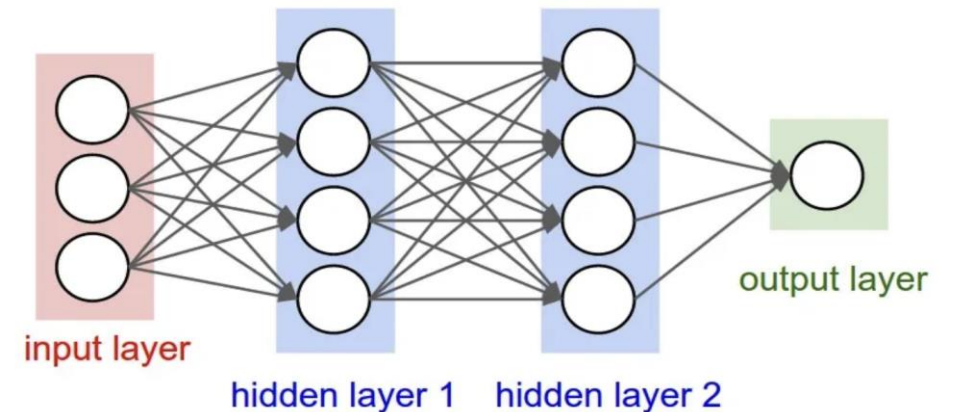
Challenges: Analysing transcripts of around 35-55 min interview per stakeholder , sensitive data

BERT

BERT: Bidirectional Encoder Representation from transformers

- Trained on vast amount of data
- Understand context from both directions in a sentence
- Revolutionized machine understanding of Human language

Ex:- “He went to bank to withdraw money”



GPT2. - 2019

GPT2: Generative Pre-trained Transformer 2

Can generate coherent and contextually relevant summaries by understanding and rephrasing the original text

Mimics human like text generation by predicting the next word or phrase.

Can handle complex articles and topics

Reduces manual effort in summarization.



Results

Efficiency

BERT and GPT2 expediated the review process

Key Findings

- Stakeholder's perceptions on housing availability and affordability
- Challenges in providing housing for essential workers
- Opportunities for creating affordable housing programs

demo1.ipynb ●

intro.txt



intro.txt

```
1 Extensive literature has called attention to the inequitable distrib  
2 research and reports have concentrated on the medical workforce, eve  
3 of the entire national registered health care workforce. Combined, r  
4 registered health professionals and dental and allied health profess  
5 the remaining 17% being generalist and specialist medical practitior  
6 gap in the literature by developing a greater understanding of facto  
7 to take up positions in rural, regional and remote locations.
```

```
8 A focus on rural placement opportunities for all health professional  
9 for building a sustainable and high-quality multidisciplinary rural  
10 health professional degrees, many of who are based at metropolitan u  
11 with varying levels of support through their 'parent' university. Ru  
12 through the network of rural-based University Departments of Rural h  
13 which are funded under Australian Government's Rural Health Multidis  
14 Professional placement experiences provide opportunities for student  
15 and can be influential on students' decision-making about their futu  
16 able to develop an understanding of the nuances of rural practice ir  
17 needs of rural communities4 and cultural protocols.5 There is potent  
18 in a rural setting to stimulate students' interest in returning and  
19 graduate rural practice work locations and rural graduate programs f  
20 placement experiences.
```

```
21 4,8-10
```

alice.txt

```
1 Alice was beginning to get very tired of sitting by her sister
2 on the bank, and of having nothing to do: once or twice she had
3 peeped into the book her sister was reading, but it had no
4 pictures or conversations in it, `and what is the use of a book,'
5 thought Alice `without pictures or conversation?'
6
7     So she was considering in her own mind (as well as she could,
8 for the hot day made her feel very sleepy and stupid), whether
9 the pleasure of making a daisy-chain would be worth the trouble
10 of getting up and picking the daisies, when suddenly a White
11 Rabbit with pink eyes ran close by her.
12
13     There was nothing so VERY remarkable in that; nor did Alice
14 think it so VERY much out of the way to hear the Rabbit say to
15 itself, `Oh dear! Oh dear! I shall be late!' (when she thought
16 it over afterwards, it occurred to her that she ought to have
17 wondered at this, but at the time it all seemed quite natural);
18 but when the Rabbit actually TOOK A WATCH OUT OF ITS WAISTCOAT-
19 POCKET, and looked at it, and then hurried on, Alice started to
20 her feet, for it flashed across her mind that she had never
21 before seen a rabbit with either a waistcoat-pocket, or a watch to
```

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