Translating Languages on AWS with Amazon Translate

GETTING STARTED WITH AMAZON TRANSLATE

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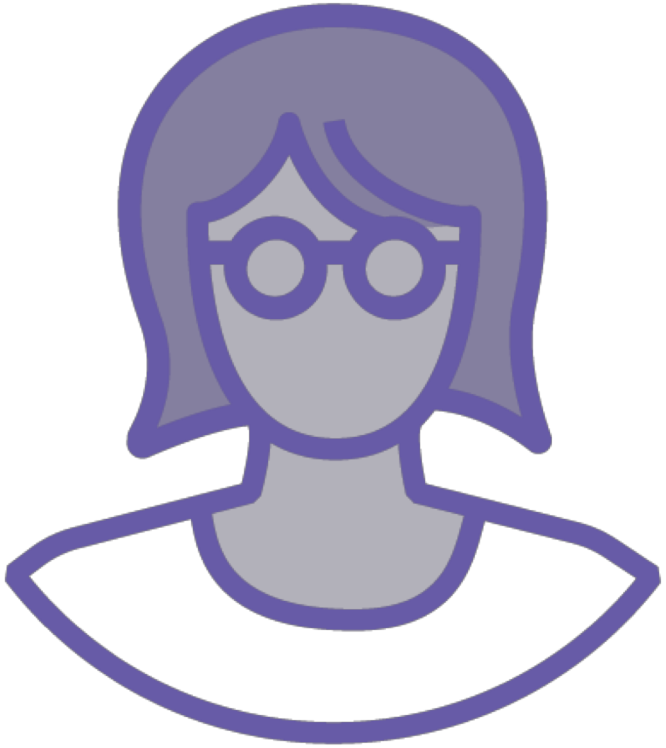
Who is this course for?



You might want...

- Direct exposure to Amazon Translate
- To work on eight hands-on demos
- To integrate Amazon Translate with other AWS services

You probably have...

- Some development experience
- Basic knowledge of AWS
- Taken a course on AWS development
  - AWS SDKs, IAM

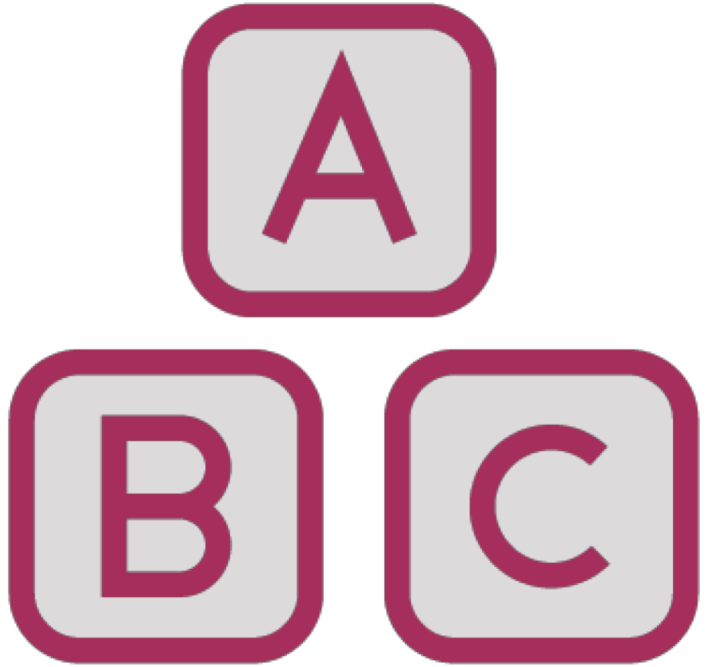
What will you learn from this course?

The capabilities of Amazon Translate

How to use Amazon Translate with:

- The AWS SDKs
- The AWS Console
- Other AWS services

Techniques to secure and monitor Amazon Translate



Overview

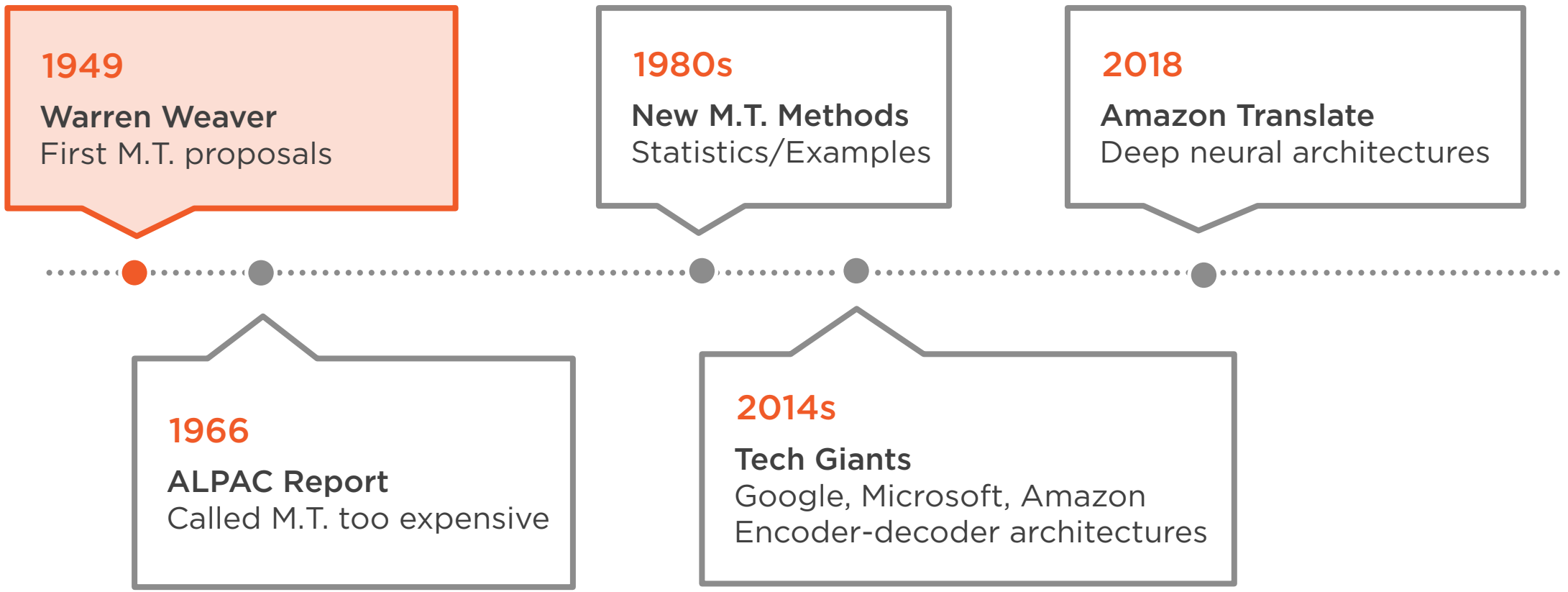
Translation essentials

- Machine translation background
- Use cases of machine translation
- Challenges of translation
- Amazon Translate background

Demo – Translating text in the console

Translation Essentials

Machine Translation Timeline



Types of Translation

Machine Translation	Human Translation
Cheap	Expensive
Handles massive volume	Difficult to scale
Algorithms and programs can translate multiple languages	Cross-language translation may require multiple translators
Can be used to suit a large variety of use-cases	Suited to smaller-scale problems without significant volume
Potential for error reduced over time as data and algorithms improve	Potential for error depends on translator skill and experience

Use Cases for Machine Translation

User-authored content (reviews, support)

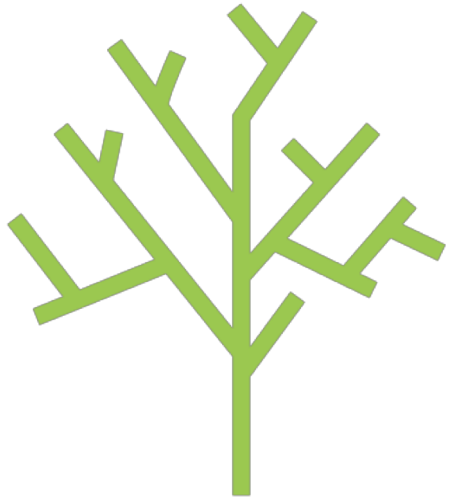
Text analytics

Real-time communication

First-round translation with post-editing

Application integration

Challenges of Translation

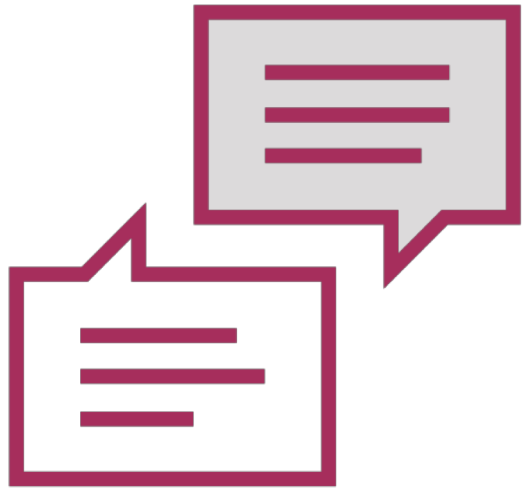


Data sparsity

Missing specific words/compounds in common languages

Context

Gendered nouns, morphological grammar



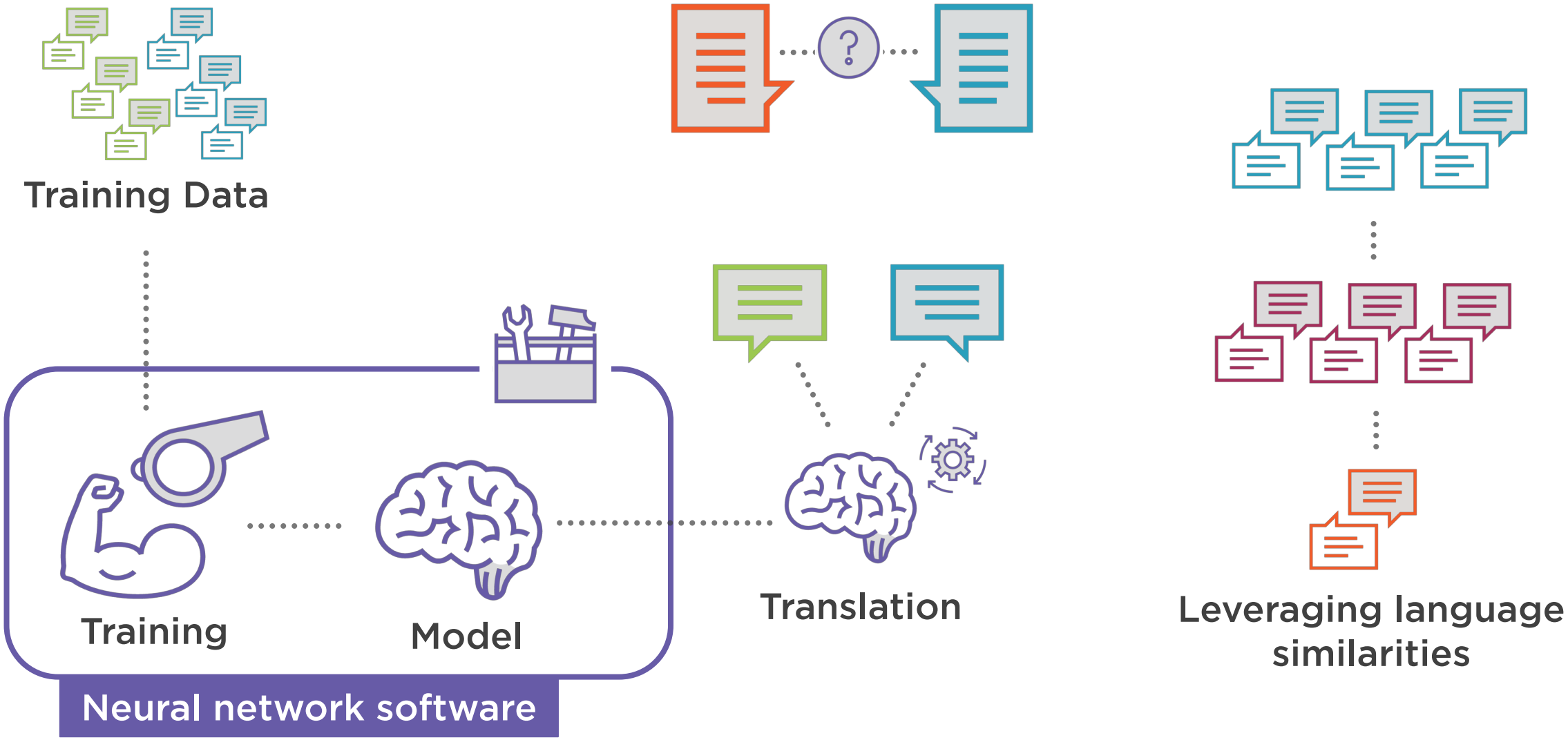
Language pairings

Limited information between less-translated languages

Neural vs. Statistical Machine Translation

Neural	Statistical
Translates word by word	Translates phrases
By 2016 used by major tech companies Google, Microsoft, Amazon	Less common in most large-scale translation engines
Single sequence models that predict one word at a time	Separate components for different parts of the translation process
Now boast regularly higher BLEU improvements than statistical models	Best statistical models are now underperforming compared to neural
Requires large amounts of training data	Requires more feature engineering

How NMT Overcomes Challenges



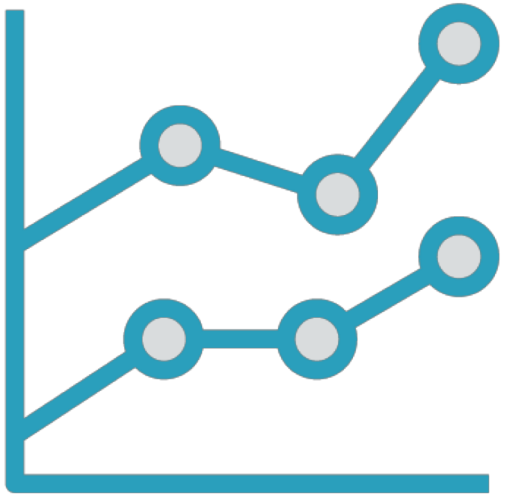
Applying Deep Neural Network Techniques

Image processing and captioning

Speech recognition

Other deep neural applications

Why Focus on NMT?



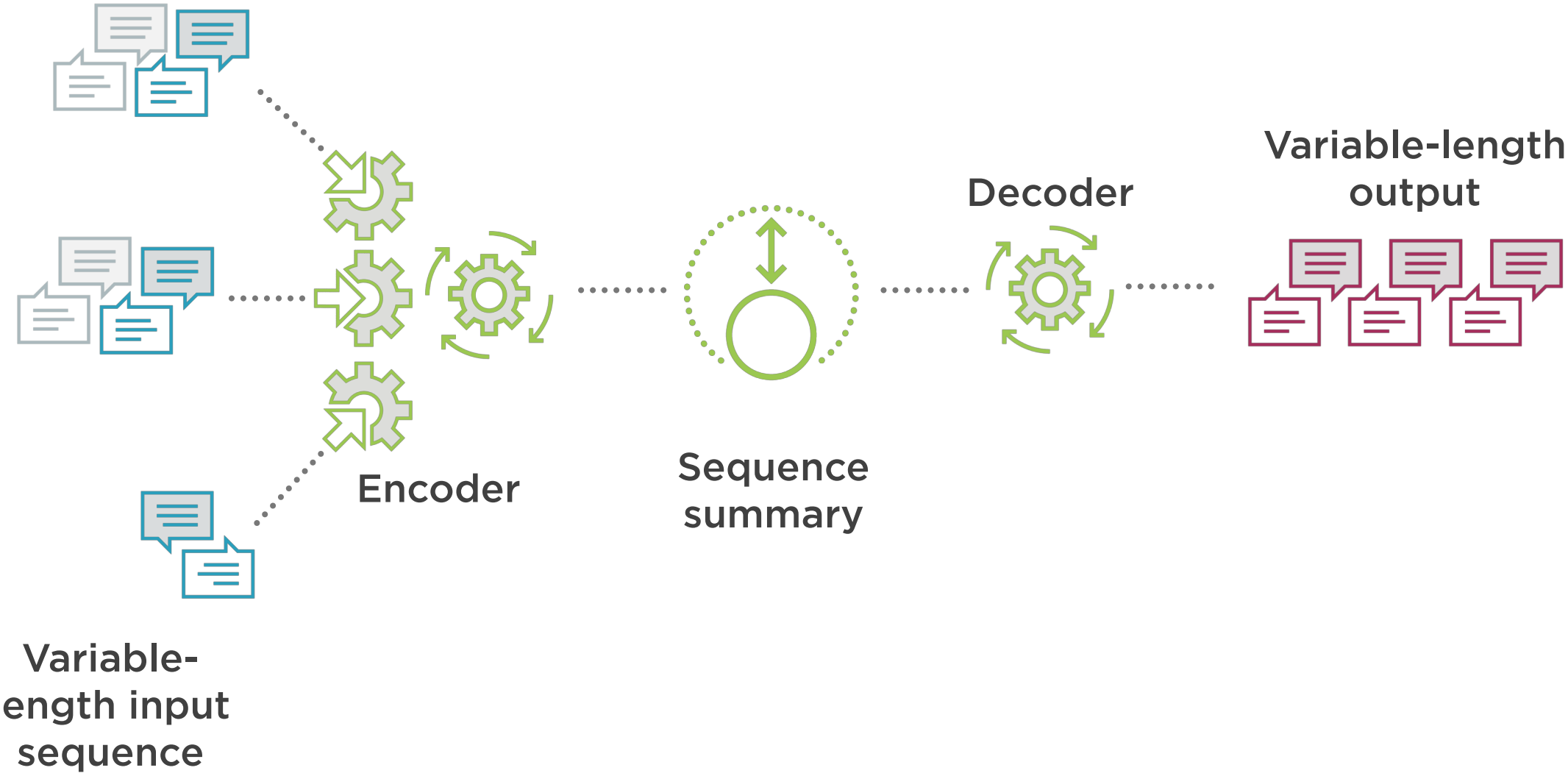
It's more popular

All the major players and researchers are focused on NMT methods

It's more effective

It shows better translations and more improvement than other methods used

Encoder-Decoder



Why Amazon Translate?

Integrations with other AWS services

Improving language coverage

Working on higher quality translations

Demo

Translating text in the console

- Using Amazon Translate in the console
- Real-time translation
- Peek at custom terminologies

Summary

Translation essentials

- Timeline of translation technology
- Related purposes and challenges
- Technology around Amazon Translate

Demo

- Translated text in the AWS console
- Peeked over language pairs
- Glanced at custom terminology