Engaging Content
Engaging People

Research and Applications of Machine Translation: Personal Experience

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Outline

Personal Research History in MT

Selected MT Application Projects

Thoughts and Perspectives

Personal Research History in MT

1990-2002: Rule-based Period

2003-2014: Statistical Period

2015-present: Neural Period

Rule-based Period

- 1990-1992: “863” IMT Project
- 1993-2002: TransEasy
  - 1993-1994: Design
  - 1994-1996: Implementation
    - 1994: Collaboration with PKU
    - 1996: “863” Evaluation
  - 1997-2001: Improvement
  - 2002: NIST Evaluation
  - Open Source: NanGe
- 2002: Word Similarity Computing based on How-Net

Statistical Period

- Chinese Segmentation
  - ICTCLAS (2002-2003)
- Word Alignment
  - Log-linear models for word alignment (2005)
  - Discriminative word alignment (2009)
- Syntax-based SMT
  - Tree-to-String SMT (2006)
  - ME-BTG SMT (2006)
  - Forest-based SMT (2008)
  - Context-Aware Rule Selection for SMT (2008)
  - Dependency-to-String SMT (2011-2013)
  - Graph-based MT (2015-2017)
- Human-machine Interaction for SMT
  - TM-SMT Combination (2015-2016)
  - Quality Estimation (2015-2017)
- MT Evaluation
  - Syntax-based MT Metrics (2014)
  - Combined MT Metrics (2016-2017)

Neural Period

- Human-machine Interaction for NMT
  - Constrained Decoding for NMT (2017)
- Multi-model MT
  - Image-enhanced NMT (2017)
- Morphologically Rich Language MT
  - Subword Segmentation for NMT (2017)
  - Subword level Neural Language Model (2017)
- Improved NMT
  - Interactive Attention for Neural Machine Translation
- Discourse Translation
  - Dropped Pronoun Translation (2015)
  - Dialog Translation (2016)
- Domain Adaptation for MT
  - Domain Adaptation with Topic Model (2016)
  - Domain Adaptation with Gated NN (2016)

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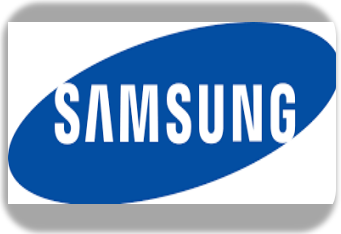
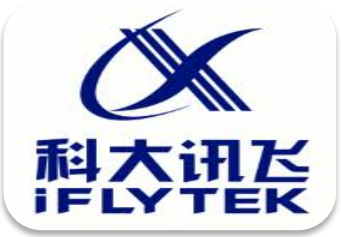


Samsung

Alibaba



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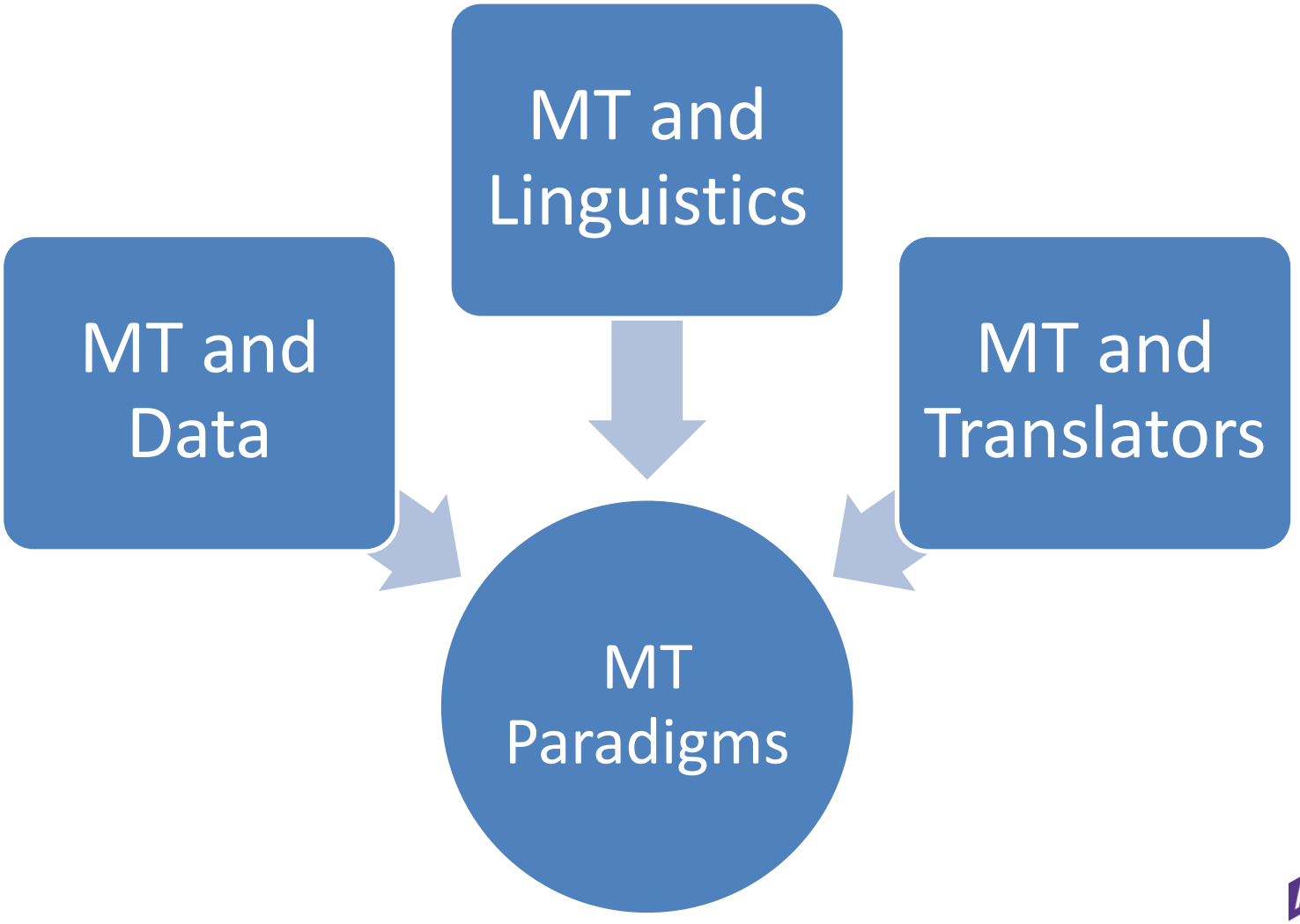

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Thanks!

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