Why Research Matters to Microsoft

Peter Lee
Corporate Vice President
Microsoft Research
Mission

Advance the field in the areas we choose to do research
Transfer the best research results into Microsoft’s products
Ensure the future of Microsoft and the computing field
Speech recognition progress

Switchboard test
Speech recognition progress

Switchboard test
Speech recognition progress

Switchboard test

WER %
Li Deng, Dong Yu, Geoffrey Hinton

Microsoft Research; Microsoft Research; University of Toronto

Deep Learning for Speech Recognition and Related Applications

7:30am - 6:30pm Saturday, December 12, 2009

Location: Hilton: Cheakamus

Abstract: Over the past 25 years or so, speech recognition technology has been dominated by a “shallow” architecture --- hidden Markov models (HMMs). Significant technological success has been achieved using complex and carefully engineered variants of HMMs. The next generation of the technology requires solutions to remaining technical challenges under diversified deployment environments. These challenges, not adequately addressed in the past, arise from the many types of variability present in the speech generation process. Overcoming these challenges is likely to require “deep” architectures with efficient learning algorithms. For speech recognition and related sequential pattern recognition applications, some attempts have been made in the past to develop computational architectures that are “deeper” than conventional HMMs, such as hierarchical HMMs, hierarchical point-process models, hidden dynamic models, and multi-level detection-based architectures, etc. While positive recognition results have been reported, there has been a conspicuous lack of systematic learning techniques and theoretical guidance to facilitate the development of these deep architectures. Further, there has been virtually no effective communication between machine learning researchers and speech recognition researchers who are both advocating the use of deep architecture and learning. One goal of the proposed workshop is to bring together these two groups of researchers to review the progress in both fields and to identify promising and synergistic research directions for potential future cross-fertilization and collaboration.
Roles of Pre-Training and Fine-Tuning in Context-Dependent DBN-HMMs for Real-World Speech Recognition

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NIPS 2010 Workshop on Deep Learning and Unsupervised Feature Learning

LARGE VOCABULARY CONTINUOUS SPEECH RECOGNITION WITH CONTEXT-DEPENDENT DBN-HMMS

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ICASSP 2011

Conversational Speech Transcription Using Context-Dependent Deep Neural Networks

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INTERSPEECH 2011
Scientists See Promise in Deep-Learning Programs
John Markoff
November 23, 2012
The central role of university collaboration
Dependency Treelet Translation: Syntactically Informed Phrasal SMT

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ACL 2007

Towards Concept-Based Translation Models Using Search Logs for Query Expansion

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CIKM 2012
At Microsoft, every day is a good day to do research!
The adoption of Microsoft Translator Hub has truly helped us deliver on the promise of lowering costs, improving the customer experience and ensuring that they will return.

- Joseph Fiorello, VP and General Manager, Global Software Products, Lionbridge Technologies

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Built on Windows Azure, Microsoft Translator Hub is an extension of the Microsoft Translator platform and service. You can build a superior translation system easily, within a private website, by combining your translated documents with the power of Microsoft Translator's big data back end. Once you are satisfied with your translation, you may share it publicly on the web.

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Microsoft Translator Hub for Communities
Details
COTTON DAY DRESS - NEW
Beautiful printed cotton day dress with fitted top and slightly flare skirt. The dress has a high back neckline with a concealed centre zip. New with tags.
Size: Tagged 10, please check measurements given below
Measurements: All measurements are taken with the garment lying flat, from side to side, on one side only - bust 82cm, waist 64cm, length 95cm.
Fabric: Cotton
Stretchy?: Slightly
Fastenings: Zip
Care: Hand wash
Condition: New with tags
Boring bits and return policy: All our items are carefully inspected for faults, however sometimes these can be overlooked. If you feel your item has not been accurately described please contact us and we will do our best to resolve your issue. Payment or contact within 2 days is greatly appreciated.
If you have any questions please don't hesitate to contact us - we'd love to hear from you :)
A **pipeline** from basic research to tech innovation
open-ended

reactive

short-term

long-term
Disruptive

Blue Sky

Mission-focused

Sustaining
open-ended

reactive

short-term

long-term

Invent

Understand

Solve

Improve
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