

COMPUTER SCIENCE & ELECTRICAL ENGINEERING COLLOQUIUM

“Segmental Conditional Random Fields for Speech Recognition”

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“Sponsored by Dallas Chapter of IEEE Signal Processing Society”

Abstract

Novel techniques in speech recognition are often hampered by the long road that must be followed to turn them into fully functional systems capable of competing with the state-of-the-art. In this work, we explore the use of Segmental Conditional Random Fields as an integrating technology which can augment the best conventional systems with information from novel scientific approaches. Segmental Conditional Random Fields provide a principled, flexible framework to express a new class of claims that are either impossible or cumbersome to integrate in current speech recognition systems based on Hidden Markov Models. We illustrate the approach with work done at Microsoft and applied at a Johns Hopkins University workshop, in which we find that the SCRF framework is able to appropriately weight different information sources.

Joint work with Geoff Zweig at Microsoft Research.

Biography

Patrick Nguyen is a research scientist in Google Research, Mountain View, CA. Prior to joining Google, he was with Microsoft Research in Redmond, WA from 2004-2010. Prior to that, he was working at the Panasonic Speech Technology Laboratory from 2000-2004, in Santa Barbara, CA. In 1998 he started a company which provided a market-maker platform for real-time foreign exchange trading. He received his Doctorate degree from the Swiss Federal Institute for Technology (EPFL) in 2002. His area of expertise revolves around statistical processing human language, and in particular speech recognition. He participated in NIST competitions, notably contributing to the winning machine translation competition in English to Chinese in 2008. He co-authored about 15 granted patents and numerous publications. He serves a reviewer for all major speech and natural language research publications. He serves in the organizing committee of ASRU 2011.

The colloquium is open to the general public

Date: Friday, April 22, 2011

Time: 10:30am to 11:30am

Location: Room: ECS South 2.410

(Refreshments will be served at 10:15am)

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