Distinguished Lecture: Michael Riley

Place and date: Oriental COCOSDA 2014 in Phuket, Thailand from Sept 10 to Sept 12, 2014

Host: Prof. Chai Wutiwiwatchai and Prof. Ananlada Chotimongkol of NECTEC, Thailand

Title: Weighted Transducers in Speech and Language Processing

Abstract: This talk will describe the use of weighted transducers in speech and language processing. Weighted transducers are automata where each transition has an input label, an output label, and a weight. They have key applications in speech recognition and synthesis, machine translation, optical character recognition, pattern matching, string processing, machine learning, information extraction and retrieval among others.

We give a brief history of the field, an overview of the theory and algorithms of weighted finite-state and pushdown transducers, a discussion of available software libraries, a description of applications to speech recognition, speech synthesis, machine translation and NLP, and a short overview of current research problems.

The talk was well-attended and generated some interesting questions at the conclusion of the talk and in personal followups. I was pleased to also see several participants were familiar with and users of our open-source tools associated with the material in this talk and had requests to provide guidance on their particular applications.