

Topic 8

Speech Knowledge Integration

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Two Aspects

- **Speech Knowledge Integration**
 - Speech production, speech perception, auditory system, language acquisition, cognitive functions, etc.
 - --> Gather/incorporate bio-inspired information
- **Speech Knowledge Integration**
 - Information type: acoustic, linguistic, syntactic, semantic, pragmatic, etc.
 - --> Leverage multiple knowledge sources

Snapshot

- Where we Are
 - Integration infancy, but some promising forays
- How we Got There
 - Cross-disciplinary efforts
- Where we Need to Be
 - Sub-human --> human --> super-human?
- Key Challenge
 - How to consistently extract, represent & exploit information by nature fragmented & heterogeneous

Snapshot (cont.)

- Research Directions
 - “Integration layer” within existing framework vs. emergent integrative paradigm (like Chin’s, Fred’s)
- Measuring Progress
 - The curse of paradigm shift
- Evidence we Have Made Progress
 - The curse of (training data) abundance
- Expectations for the Future
 - The curse of marketing hype

Speakers

- Jim Glass
 - Spoken Language Systems Group, Computer Science & Artificial Intelligence Lab, MIT
 - Theme: “Speech science meets speech technology”
- Eric Fosler-Lussier
 - Computer & Information Science Dept., Ohio State University
 - Theme: “Combining multiple sources of evidence”