
NSF Symposium on Next Generation Automatic Speech Recognition

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Sponsor: NSF HLC Program, Mary Harper

Oct 7-8, 2003, Atlanta, GA, TSRB, Georgia Tech

Kickoff

- **Why are we here?**
 - Finding ways to solving ASR and bridging performance gaps between ASR and HSR
- **How far are we from solving these problems?**
 - Many different views
- **Can we solve them by continuing on our path?**
 - Many different views
- **Are there other ways? Is it worth pursuing them?**
 - Many different views. You will hear some today and tomorrow
- **What it takes?**
 - You can all contribute to the discussions. Have fun!

1. Program: First Day

- **Infrastructure and Cross-Disciplinary Research**
 - Wayne/Pallett, Bilmes, Mohri, Harper
- **Breakout, Report and First Discussion**
 - Godfrey, Crystal; Byrne/Kirchhoff
- **Speech Recognition**
 - Rabiner, Picheny, Lee
- **Speech Production and Perception**
 - Flanagan, Deng, Allen
- **Bio-Inspired Signal Processing**
 - Morgan, Hermansky, D. Anderson/Hasler
- **Breakout, Report and Second Discussion**
 - Nahamoo, Zue, Hasegawa-Johnson; Hirschberg/Ellis

2. Program: Second Day

- **Speech Modeling**
 - Makhoul, Juang, Zhao
- **Speech Analysis and Synthesis**
 - Stern, Greenberg, Schroeter
- **Speech Knowledge Integration**
 - Bellegarda, Glass, Fosler-Lussier
- **Breakout, Report and Third Discussion**
 - Picone, Hansen, Gorin; Levinson/Dusan
- **Panel: New Way of Thinking about Speech Recognition**
 - Cole+Ostendorf/Pellom+Narayanan
 - Panelist: Acero, Allen, Cole, Greenberg, Harper, Hirschberg, Morgan, Ostendorf

Summary

- **8 technical topics, 8 corresponding breakout sessions**
 - **3 discussion sessions & a panel: more discussions desired**
 - **Hot topics**
 - Infrastructure to support ASR research and development
 - How to lower ASR entry barriers? What supporting structure makes sense
 - Are existing tools sufficient?
 - Modeling paradigms and frameworks
 - Knowledge-based, data-driven, bio-inspired signal processing, analog and digital
 - Advances in Gaussian mixture modeling and structured LM (more data)
 - Integrated production-perception modeling
 - Graphical models for event, speech, language, and other knowledge sources
 - Detection-based ASRU with detailed event detection, combination & diagnosis
 - Modeling of speech knowledge integration - bottlenecks and promises
 - Learning from other areas of speech, language and acoustics research
 - Many other possibilities – multi-disciplinary collaboration research?
 - **Promising directions**
 - Need time to sort out the detail
 - **Stay tuned: check the symposium web page for updates**
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What's Next?

- **For Continuing Discussions**

- Not enough discussions in this Symposium, how do we carry out more?
- Is web a good forum?
- ASRU2003

- **For Report**

- Final report on <http://www.ece.gatech.edu/~chl/ngasr03> by year end
- Your presentations to be documented on the web, including all discussions in panel and breakout sessions by 10/25/03
- Feel free to share your views even you did not get to present them at the conference, do include links to your papers on web for further references
- Feel Free to expand your presentations for web documentation
- Referred journal publication? Special issues?

- **Send me all complaints. I am doing this the first time at GaTech**

- **Thanks**

Many Thanks !!