Oral Presentations and Dialogs

- Objectives
 - The Challenge of Oral Presentation.
 - Content and organization.

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- Visual props.
- Delivery and dialog
- Main references
 - M. Markel, Technical Communication, 9th Ed., Bedford/St. Martin's, 2010.
 - J.G. Paradis and M.L. Zimmerman, The MIT Guide to Science and Engineering Communication, 2nd Ed., MIT, 2002.

Opportunities for Oral Presentation

- Opportunities in academic
 - Seminars.
 - MSc/PhD thesis defense and QE.
 - Conference presentations: platform and poster.
- Opportunities beyond academic.
- Nature of presentation
 - Planed.
 - With visual props.
 - Create sentences as you speak.

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• Relation to presentation assignments.

Tailor the Content

- · Cover key points rather than every detail.
- Tailor background according to audience.
- Number of slides N vs number of minutes M:
 Tip: The ratio N:M is normally between 2:3 and 3:2.
 - If the ratio is decreased ...
 - If the ratio is increased ...

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Balance comprehensibility and generality.

The Challenge of Oral Presentation

- Time is usually 10 to 25 min.
 - The corresponding technical materials fit in a paper or a thesis.
- Readers of a document can choose their pace and go back, but listeners of a talk normally cannot.
- Being the focus of attention of a roomful of people can be intimidating.
- Questions come from an audience with diverse backgrounds.

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Address Difficulty in Listening

- Readers can go back, but listeners normally cannot.
- A better prepared mind can better follow a talk. – Frame: a blank structure for data to be filled in.
 - Frame: a blank structure for data to be in
 Each talk fills a particular set of frames.
 - Each taik fins a particular set of frames.
 - Tell audience what <u>frames</u> you will be filling in.
- Tip: Discuss the organization or main message early.
- Tip: Tell listeners when you finish one component and start another.
- End your talk with a review of <u>main points</u>.

Ex Multiagent Bayesian Forecasting of Time Series with Graphical Models

Outline

A motivating application

- Limitations of existing methods
- Graphical model for cooperative
- multiagent Bayesian forecasting
- Multiagent forecasting algorithm
- Experimental results
- Future research

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Ex Summary and Future Work

- Presented an exact framework for multiagent Bayesian forecasting in time series based on graphical models.
- Experiment with a supply chain testbed demonstrates superior forecasting performance over DBN agents.
- We are currently extending the framework to a nontrivial class of time-variant environments.

Organize the Talk

- Given the particular audience, organize info in the clearest and most convincing sequence.
 - Ex Outline, background, problem, solution, ...
 - Ex Problem instance, outline, ...

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- Budget your time accordingly before making slides.
 - Ex Time allocation for a 20-min conference talk.

Produce Effective Visuals

• Do not jam-pack a slide.

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- For the main content, make sure that fonts are large enough to be seen.
- Avoid lengthy sentences.

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• Avoid formal materials without intuitive explanation.

Ex Admission to PhD program

- By vote of faculty based on consideration of - Grades
 - overallPC score \geq 0 expected but not required
 - Performance in assistantshipsResearch potential and accomplishments

 - Cualifying examination
 Examination of creativity, ability to integrate material, and formal thinking
 May be waived if PC score > 2.0 and there exists strong faculty support for
 admission

 - May be attempted twice forfeit counts as a failure
- Generally first considered in 3rd semester Faculty provides guidance on Qualifying exam candidacy
 - Proceed, waive, or not recommended Admission considered following administration of Qualifying exam

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Ex Introducing a Product

"The 3DM-GX1[™] combines three angular rate gyros with three orthogonal DC accelerometers, three orthogonal magnetometers, multiplexer, 16 bit A/D converter, and embedded microcontroller, to output its orientation in dynamic and static environments."

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Formulation

$d\omega^{\iota s_s}$	-	Lin, (., in,, in,)	(5)
dt	_	$\kappa_s (\omega_e - \omega^{-1})$	(5)
$\frac{d\omega^{isy}}{dt}$	-	$\left(\frac{d\omega_e^{a_f}}{dC^{a_d}}\right)\frac{dC^{a_d}}{dt}$	(6)
$p^{a} \frac{dC^{ia}}{dt}$	-	$-\theta^{s_f}\rho^{s_f}\left(\frac{d\omega_e^{is_f}}{dC^{ia}}\right)\frac{dC^{ia}}{dt}-\theta^{s_s}\rho^{s_s}k_s^{is_s}\left(\omega_e^{is_s}-\omega^{is_s}\right)$	(7)
Eqn (6) nave	is re	s dundant. Introducing the retardation factor ${\cal R}_f$ and dropping the supersc	ript <i>i</i> , we
	dw**	$= k^{s_s} (\omega^{s_s} - \omega^{s_s})$	(8)

p://www.cs.unc.edu/Resources/Presentations/prins/PSE-ResearchFair2004.pdf	12
$\omega^{sf} = \omega_e^{sf}$	(13)
$\omega_e^{s_f} = K_f^{s_f}(C^a)^{n^{s_f}}$	
$\omega_e^{s_*} = K_f^{s_*}(C^a)^{n^{s_*}}$	
$R_f = 1 + \frac{\theta^s f \rho^{sf}}{\theta^s} \frac{d\omega_e^{sf}}{dC^s}$	(12)
with the constitutive relations and definitions	
$\omega^{s_{s}}(t^{0}) = \omega_{0}^{s_{s}}$	(11)
$C^a(t^0) = C_0^a$	(10)
for $t \in (t^0, t^f]$ and	
$R_f(C^a)\frac{dC^a}{dt} = -\frac{\theta^{s_s}\rho^{s_s}}{\theta^a}k_s^{s_s}(\omega_e^{s_s} - \omega^{s_s})$	(9)
$\frac{dt}{dt} = \kappa_s (\omega_e - \omega_f)$	(0)

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Produce Effective Visuals (cont)

- Figures and tables from the document may be too dense and harder to follow.
 - Create a new copy when necessary.
- To show many details, use separate slides on the same subject and progressively disclose complexity.
 Ex BN, DBN, MSBN, and DMSBN.
- Figure, table, audio, image, and video may be used.
 Follow guidelines on copyright issues.
- Number the slides.

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Ex Bayesian Network (BN)

- A stochastic environment can be modeled with a BN [Pearl, 88].
 - A set of variables each associated with a domain.
 - Dependency among variables is represented by a DAG.
 - Strength of dependency of each variable on its parents is represented by a CPT.
- An agent with a BN can reason about the environment.

Ex Dynamic Bayesian Network (DBN)

- A stochastic and temporarily evolving environment can be modeled with a DBN [Dean & Kanazawa, 89; Kjaerulff, 92].
 - Each slice represents the state of the env at a given interval.
 - Arcs between slices and corresponding CPTs represent temporal transition.
- An agent with a DBN can forecast events in the dynamic environment.



Ex Multiply Sectioned Bayesian Network (MSBN)

- A stochastic and distributed environment can be modeled with a cooperative multiagent MSBN [Xiang, 02].
- Environment is divided into overlapping subdomains, each in charge by an agent.
- For exact inference, agents are organized into a hypertree.



Ex Dynamic Multiply Sectioned Bayesian Network (DMSBN)

- We propose to model a stochastic, dynamic, and distributed environment with a cooperative multiagent DMSBN.
- Env at each time interval is divided into subdomains, each in charge by an agent.
- Temporal evolution of each subdomain is modeled as a DBN.
- At each time interval, subdomains are collectively modeled as an MSBN.
- Task: Forecast the state of env for t=i+1 based on distributed observations up to t=i.

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Delivery

- Let audience know your current focus on the slide.
- Don't forward a slide so quickly that it can't be read.
- Don't block audience's view of the screen.
 Tip: Use a pointer or a wireless mouse.
- Reading a paper or script is usually not preferred.
- Face the audience and have eye contact.
- Rehearse your talk. If too long, cut before you present it, not as you are giving it.

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Challenge of Question-and-Answer

- Scenarios: conference discussion or thesis defense. – Difference in length.
 - Difference in natures of questions.
- The uncertainty

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- The questioner has a different background or perspective.
- A question may be new to you in its content or form.
- If you don't understand the question, try to clarify.
- Tip: When necessary, repeat the question so everyone can hear it.

Question-and-Answer Guidelines

- Answer to the point and do not over-respond.
- Answer questions honestly.
- Offer to continue at another time if necessary.
- Ultimately, good performance depends on
 - thorough understanding,
 - quick thinking, and
 - practice.
- Conference discussions are valuable opportunities to debug and extend your research.

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Other Guidelines

- Oral defense
 - Prepare as if the primary audience is graduate students.
- Poster presentation
 - Visual aid is a poster, commonly about 4'x8'.
 - Not subject to the page size limitation in slides.
 - Ex An example poster.
 - Multiple, small groups of interested audience.
 - Tip: Ask their background and go straightly to what they want to know.

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