PRESENTATION GUIDANCE FROM CLASSROOM FEEDBACK

Present a research paper with a clear argument

Problem → Mechanism → Evidence

What needs to be solved?

How does the proposal work?

What does the result establish?

Explain the contribution, assess its support, and add a reasoned interpretation of your own.

01 / STRUCTURE AND TIMING

A 20-minute plan gives each section a purpose



Q&A follows the talk. Adjust the balance for the paper’s contribution

Retain an explanation of method and supporting evidence.

GENERAL PRESENTATION TECHNIQUES / SOURCE-BASED GUIDANCE

Plan the audience's learning before arranging the slides

Start with the audience	Course presentation at class or conference presentation.
Build a message sequence	Write a sentence for each main point – use pause pages.
Coordinate visual and spoken evidence	What you show and what you say need to match.

Apply these principles to a scientific argument: problem, mechanism, evidence, interpretation.

Teaching examples created for this lecture · General techniques adapted from MIT Communication Lab and Assertion–Evidence

Sources: MIT EECS — Slide Presentation; Harvard Catalyst — Slides; Assertion–Evidence — Tutorial. Links on final slide.

01 / PRESENTATION FORMAT

Use a consistent visual and technical structure

A shared slide format

- Descriptive title
- Stable section label
- No more than 6 items on one page
- Source beside the borrowed material

A shared technical vocabulary

- Define graph, task, and symbols early.
- Use the same notation throughout.
- Color highlights remain consistent.

BEFORE AND AFTER / METHOD EXPLANATION

A worked calculation makes the aggregation step visible

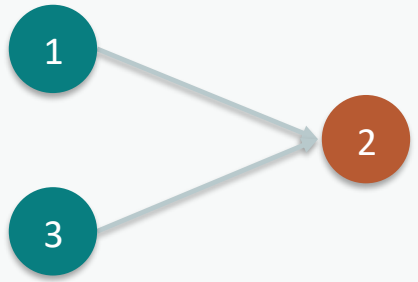
BEFORE / crowded draft

Graph convolution methodology

- Graphs consist of nodes, edges, features, labels, neighborhoods, adjacency matrices and degree matrices.
- A layer aggregates neighbors, applies shared weights, introduces nonlinearities and can include self-loops.
- Normalization changes the feature scale and depends on the operator used.
- Several layers enlarge the receptive field; training uses cross-entropy and backpropagation.
- Our aggregation uses the average of neighboring scalar features.

AFTER / one explicit message

Two neighbor values produce a mean of 2



(1 + 3) / 2 = 2

Message to target node

The revision keeps the operation being explained and places the inputs next to the calculation. Other stages receive their own slides.

02 / NARRATION AND DELIVERY

Displayed bullets should support the spoken explanation

Visible on the slide

- Each node aggregates its neighbors.
- Shared weights apply at every node.
- The update produces new node features.

A connected explanation

“The layer gathers information from connected nodes. It applies the same learned transformation at each location, then uses the aggregated information to update each node.”

Match content and order. Use speech to explain causal links, assumptions, and the meaning of the visual.

BEFORE AND AFTER / THEORY EXPLANATION

A theory slide should expose the assumptions and inference

BEFORE / crowded draft

Spectral analysis and proof

Let A denote adjacency, D the degree matrix, $P = D^{-1}A$, x a node signal, I the identity, $H = (I + P)/2$ and $z = Hx$. On a degree-two cycle with alternating labels, $Px = -x$. Eigenvalues of P determine the response $h(\lambda) = (1 + \lambda)/2$. For $\lambda = -1$ we obtain $h(-1) = 0$, so the signal vanishes after a single application. This suggests a limitation for a classifier that receives z alone. Different normalizations and different inputs lead to different conclusions.

AFTER / one explicit message

Equal mixing cancels an alternating signal

Assume a cycle with alternating $+1$ and -1.
P takes the mean of two neighbors.

$$Px = -x \longrightarrow (x + Px)/2 = 0$$

The revision names the assumptions, retains the essential algebra, and gives the result a precise scope.

BEFORE AND AFTER / EXPERIMENT EXPLANATION

A result slide should identify the comparison that tests the claim

BEFORE / crowded draft

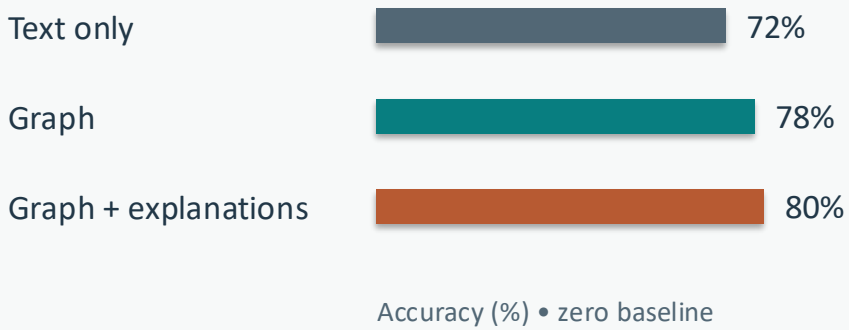
Experimental results

Model	Accuracy	Macro-F1
Text only	72%	0.70
Graph	78%	0.76
Graph + explanations	80%	0.78

Performance improves on both metrics. Graphs combine neighborhood information. Explanations may improve features. The final system exceeds the text baseline by 8 points. Further tuning may help.

AFTER / one explicit message

Explanations add 2 accuracy points



Illustrative data, not paper results. Both panels use the same values. Test the explanation feature with 80% versus 78%.

03 / REFLECTION AND PERSONAL CONTRIBUTION

Your interpretation should lead to a testable question

Paper finding	The explanation-augmented model has higher accuracy in the reported experiment.
Your interpretation	The explanation may highlight class-related concepts already present in the node text.
Your proposed test	Replace explanations with equal-length summaries, keeping the encoder and graph model fixed.

An original contribution can be a derivation, counterexample, controlled reproduction, or well-motivated experiment design.

03 / HISTORICAL CONTEXT AND SUBSEQUENT DEVELOPMENT

Connect an earlier paper to a changing research question

2021	2023	2025
Identify the bottleneck	Analyze graph structure	Control the tradeoff
Alon & Yahav connect long-range dependencies to information compression.	Black et al. study effective resistance and motivate rewiring.	Liang et al. pursue rewiring with sparsity and spectral preservation.

Alon & Yahav, ICLR 2021 · Black et al., ICML 2023 · Liang et al., ICML 2025. Full titles and links in speaker notes.

Explain what changed in the question, assumption, or mechanism, and what still needs evaluation.

04 / PREPARATION AND DISCUSSION

Rehearsal checks the explanation at audience speed

Before presenting

Rehearse aloud with a timer.
Check every equation symbol and figure label.
Practice speaker transitions.
Verify citations and exported slides.

During questions

Answer the specific question first.
Point to an assumption or result.
State uncertainty precisely.
Record a concrete follow-up when needed.

After rehearsal, revise the slide where a listener lost the argument.

RESOURCES / CLICKABLE TITLES AND WEB LINKS

Reference guides for planning, visuals, and delivery

MIT EECS Communication Lab — Slide Presentation

Audience, purpose, narrative, and rehearsal

mitcommlab.mit.edu/eecs/commkit/slideshow/

MIT EECS Communication Lab — Figure Design

Visual hierarchy, annotation, and evidence selection

mitcommlab.mit.edu/eecs/commkit/figure-design/

Assertion–Evidence — Tutorial

Sentence headlines and supporting visual evidence

assertion-evidence.org/tutorial.html

Harvard Catalyst — Slides

Scientific slide design and readable visuals

catalyst.harvard.edu/writing-communication-center/visualize-science/slides/

Carnegie Mellon — Oral Presentation Rubric

Organization, supporting material, and delivery

cmu.edu/corecompetencies/communication/resources-and-tools/oral-presentation-rubric/