

# The revbadge Package

## Custom Highlighting for Academic Revisions

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### 1 INTRODUCTION & PACKAGE PURPOSE

With the increasing rigor of peer-review processes, keeping track of manuscript modifications has become crucial. The `revbadge` package provides a **triple-component** architecture:

- The inline macro `\revbadgeinline` for short, mid-sentence edits.
- The block environment `revbadge` for larger paragraphs or whole sections.
- The multi-line environment `revbadgemultiline`, which accepts line breaks in the badge label and uses a smaller font to minimise visual impact.

All three share the same colour palette and automatic cross-referencing via `cleveref`. This manual shows each component in action.

### 2 CORE COMMANDS & ENVIRONMENTS

#### 2.1 Inline Edits

**Command used:** `\revbadgeinline[colframe=purp,colback=purpb]{R3}{rev:short}{stochasticdescent}`

Small textual corrections are best handled inline. For example, Reviewer 3 pointed out that our earlier term was imprecise. We have corrected the phrase **R3 stochastic descent** to match the preferred domain nomenclature. As shown here, the inline macro integrates smoothly into the paragraph without altering line spacing or breaking the flow.

#### 2.2 Block Level Revisions

**Environment used:** `revbadge`

For larger text changes—such as entire paragraphs, equations, or lists—the block environment is the appropriate choice. It creates a visually distinct box with a coloured left rule and a floating badge title.

##### 2.2.1 Methodology Updates

The following example demonstrates a revision to the experimental setup. The badge label “M1” indicates that this change addresses a methodological concern raised by Reviewer 2.

**Command:** `\begin{revbadge}[colframe=aqua,colback=aquab]{M1}{rev:theory}...\end{revbadge}`

**M1**

We have revised the data collection procedure: instead of using the default sampling rate of 100 Hz, we now employ a rate of 250 Hz to capture high-frequency transients. This modification improves the signal-to-noise ratio by approximately 15% without introducing additional computational overhead.

This revision directly addresses the reviewer’s concern about temporal resolution. The box stays within the column width and can be referenced later via `\cref{rev:theory}`.

A second block example shows a longer title that contains a question, illustrating that the badge label can be any text.

**What do you mean by this?**

Our core algorithm relies on a highly modular pipeline. Reviewer 1 pointed out a structural flaw in our original baseline model equation: the loss function was not convex. Consequently, we have reformulated the optimisation objective to ensure convexity, which guarantees a unique global minimum.

The new formulation is detailed in the next subsection.

#### 2.3 Nested Frameworks and Mathematics

**Command:** nesting `revbadge` environments.

The block environment can be nested to highlight specific parts of a larger revision. This is especially useful when a general change contains a critical sub-change, such as a corrected equation.

### Overall update

We updated the primary objective function to include a regularization parameter  $\lambda$ . The new optimisation problem is:

#### Wrong equation!

$$\min_{\theta} \mathcal{L}(\theta) + \lambda \|\theta\|_2^2 \quad (1)$$

This formulation guarantees a unique global minimum under standard Lipschitz continuity conditions. The inner badge (labelled “Wrong equation!”) draws attention to the corrected expression.

As demonstrated, the outer box contains a mathematical environment, and the inner box highlights the equation itself. Both boxes scale correctly within the column.

## 2.4 Multi-line Badges

**Environment used:** `revbadgemultiline` (new in version 1.0)

Sometimes the reviewer’s comment or the revision summary is too long to fit on a single line. The multi-line environment allows the badge title to wrap over several lines, while the body text is set in a smaller font to reduce visual impact.

**Command:** `\begin{revbadgemultiline}`  
`[colframe=purp,colback=purpb]`  
`{Thisisastubstantialrevisionthatrequiresre-`  
`analysisofthedata.}{rev:r2c1}...\`  
`end{revbadgemultiline}`

### Substantial revision: re-analyse all data with new controls

The reviewer has raised several important points about methodology, statistical power, and interpretation of results. We have:

- Re-run the analysis with additional covariates (age, gender, and baseline severity).
- Conducted sensitivity analyses using different imputation methods.
- Clarified the theoretical framework with a new supplementary section.

Each point has been addressed comprehensively in the revised manuscript.

This environment is ideal for detailed responses that would otherwise crowd the margin.

## 2.5 Table Integration

**Command:** `\revbadgeinline` inside a tabular cell.

You can place inline badges directly inside table cells to flag corrections or updates. This is particularly useful for pointing out specific numeric changes.

Reviewer 1 requested updated evaluation metrics. The table below shows our corrected results, with the updated accuracy value highlighted.

TABLE 1  
Baseline Performance Metrics Comparison

Method	Accuracy (%)	F1-Score	Latency (ms)
ResNet-50	76.2	0.74	12.5
ViT-Base	81.4	0.80	24.1
Ours	<b>Inaccurate!</b> 84.9	0.83	18.4

The badge draws immediate attention to the corrected value, and the label can be referenced later.

## 2.6 Highlighting Figure Captions

You can also use inline badges in figure captions to mark a particular element (e.g., a method label) or to flag that the figure itself has been updated.



Fig. 1. Performance comparison of our method **New 6** against state-of-the-art baselines. The number “6” indicates the improved performance rank.

## 2.7 Custom Layout Formatting

**Command:** `revbadge` with extra options `top=4pt`, `bottom=4pt`.

You can fine-tune the spacing of the block environment by passing additional options to the `tcolorbox` engine. For example, the following badge has reduced vertical margins to save space.

Reviewer 2 asked for a declaration of our hardware environment. We provide it in a compact box:

### Hardware Specs

All evaluations executed natively on an NVIDIA H100 GPU cluster.  
The total execution window spanned exactly 48 continuous hours.

This customisation allows you to adapt the appearance to your document’s layout needs.

## 3 CROSS-REFERENCING TRACKER















































Because the package automatically binds internal counters to `cleveref`, referencing your edits is seamless and

context-aware. `revbadge` intelligently distinguishes between independent highlights and those nested within structural elements: if an edit is placed within a section, `\cref` will resolve to that section's location, whereas standalone edits reference their specific badge identifier.

For example, `\cref{rev:short}` outputs as highlight 1 (a standalone badge), while `\cref{rev:baseline_clarity}` directs the reader to the structural location section 2.2.1. Similarly, the tabular adjustment `\cref{rev:table_update}` points to highlight 7, and the nested math formula `\cref{rev:math_fix_2}` maps cleanly to its containing section, section 2.3. Additionally, the figure caption badge `\cref{rev:fig_caption}` resolves to highlight 9, and the multi-line badge `\cref{rev:r2c1}` is shown as section 2.4.

## 4 COLOR PALETTE

The package defines 24 unique color themes, each with a distinct frame color and a matching light background. You can use any of these names as the `colframe` and `colback` options for the environments and the inline command. The `colback` colours share the same name as the frame name, but with a letter `b` appended. i.e., blue background would have the colour of the `blueb`.

Set 1			Set 2		
Name	Frame	Bg	Name	Frame	Bg
blue			plum		
orng			rust		
gren			jade		
purp			gold		
grey			navy		
ylow			wine		
cyan			clay		
redx			aqua		
pink			char		
brow			rose		
lime			sand		
teal					
sage	