

# Package ‘lvimp’

May 8, 2026

**Type** Package

**Title** Perform Inference on Summaries of Longitudinal  
Algorithm-Agnostic Variable Importance

**Version** 1.0.0

**Description** Calculate point estimates of and valid confidence intervals for  
longitudinal summaries of nonparametric, algorithm-agnostic variable importance measures.  
For more details, see Williamson et al. (2024) <[doi:10.48550/arXiv.2311.01638](https://doi.org/10.48550/arXiv.2311.01638)>.

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**Imports** vimp

**Suggests** knitr, rmarkdown, testthat, SuperLearner

**URL** <https://bdwilliamson.github.io/lvimp/>

**BugReports** <https://github.com/bdwilliamson/lvimp/issues>

**VignetteBuilder** knitr

**RoxygenNote** 7.3.2

**Encoding** UTF-8

**NeedsCompilation** no

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**Repository** CRAN

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<code>format.lvm</code>	<i>Format a lvm object</i>
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**Description**

Format a lvm object

**Usage**

```
## S3 method for class 'lvm'
format(x, digits = 3, ...)
```

**Arguments**

<code>x</code>	the lvm object of interest
<code>digits</code>	the number of digits to format to
<code>...</code>	other options, see the generic format function

**Value**

A formatted lvm object for printing.

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<code>lvm</code>	<i>Create a Longitudinal Variable Importance Object</i>
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**Description**

Create a longitudinal variable importance object from several constituent cross-sectional variable importance objects.

**Usage**

```
lvm(vim_list = list(), timepoints = numeric())
```

**Arguments**

<code>vim_list</code>	a list of individual, cross-sectional variable importance objects. Assumed to be in order over time.
<code>timepoints</code>	a numeric vector of timepoints of interest

**Value**

an object of class lvm

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lvim_autc	<i>Area Under the Variable Importance Trajectory</i>
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**Description**

Compute a nonparametric estimate of (and efficient influence function for) the area under the longitudinal variable importance trajectory (AUTC) over a contiguous subset of the time series.

**Usage**

```
lvim_autc(
  lvim,
  indices = 1:length(lvim),
  interpolator = "linear",
  delta = 0,
  ...
)
```

**Arguments**

lvim	an object of class <code>lvim</code> containing the cross-sectional variable importance objects
indices	a numeric vector indicating the contiguous subset of the time series
interpolator	a string indicating the type of interpolator used to take the area under the trajectory
delta	null hypothesis value
...	other arguments to be passed to the interpolator function

**Value**

The `lvim` object, with point estimates, CIs, and p-values related to the area under the trend in variable importance filled in.

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lvim_average	<i>Average Longitudinal Variable Importance</i>
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**Description**

Compute a nonparametric estimate of (and efficient influence function for) the average longitudinal variable importance over a contiguous subset of the time series.

**Usage**

```
lvim_average(lvim, indices = 1:length(lvim), delta = 0)
```

**Arguments**

lvim	an object of class lvim containing the cross-sectional variable importance objects
indices	a numeric vector indicating the contiguous subset of the time series
delta	null hypothesis value

**Value**

The lvim object, with point estimates, CIs, and p-values related to the average variable importance filled in.

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 lvim\_trend

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*Linear Trend in the Longitudinal Variable Importance Trajectory*


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**Description**

Compute a nonparametric estimate of (and efficient influence function for) the linear trend in the longitudinal variable importance over a contiguous subset of the time series.

**Usage**

```
lvim_trend(lvim, indices = 1:length(lvim), delta = 0)
```

**Arguments**

lvim	an object of class lvim containing the cross-sectional variable importance objects
indices	a numeric vector indicating the contiguous subset of the time series
delta	null hypothesis value

**Value**

The lvim object, with point estimates, CIs, and p-values related to the linear trend in variable importance filled in.

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<code>print.lvim</code>	<i>Print a lvim object</i>
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**Description**

Print a lvim object

**Usage**

```
## S3 method for class 'lvim'  
print(x, ...)
```

**Arguments**

<code>x</code>	the lvim object of interest
<code>...</code>	other options, see the generic print function

**Value**

No return value, called for side effects.

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