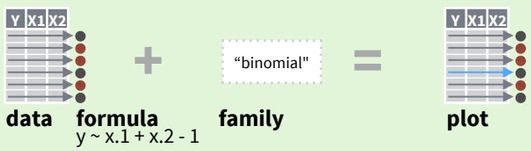
Change point analysis with fastcpd : : **CHEATSHEET**

Basics

fastcpd is based on the **Sequential Gradient Descent** and **Penalized Exact Linear Time**, avoiding repeated likelihood calculation and pruning impossible change points given a **data** set, a **cost** function, and optional **gradient / Hessian**.

data **formula** y ~ . - 1 **cost function** **fastcpd**

Various built-in families are provided to better utilize the improved performance. A model of as simple as **data** + **family** is enough.



data **formula** y ~ x.1 + x.2 - 1 **family** **plot**

Complete the template below to find change points.

fastcpd (data = `<DATA>` **)** — required

[family = `"<FAMILY>"` **OR cost =** `<COST_FUNCTION>` **],**
formula = `<FORMULA>`, beta = `<NUMERIC>`,
segment_count = `<INTEGER>`, p = `<INTEGER>`,
trim = `<NUMERIC>`, k = `<FUNCTION(x)>`,
cost_gradient = `<FUNCTION(data, theta)>`,
cost_hessian = `<FUNCTION(data, theta)>`, …)

Not required, sensible defaults supplied

fastcpd(data = data, …**)** Returns a “fastcpd" object containing the information used to call the method.

plot(fastcpd_result**)** Invokes `ggplot2` to plot the data.

summary(fastcpd_result**)** Outputs summary information of the call, including change point locations, estimated parameters and residuals for each segments.

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