

Right - is the current action correct
Bug - does the current action represent a known misconception
Help - does the current action represent a help request
Choice - is the current problem step multiple-choice
string - is the current student answer a non-numerical text string
Number - is the current student answer a number
Point - is the current student action plotting a point
Pknowretro - the probability the student knew the current skill according to BKT, if it changed (e.g. first attempt on current problem step); -1 if it did not change
Pknow -- the probability the student knew the current skill according to BKT
Punchange - 1 if pknowretro is -1; else 0 (e.g. 0 if current action is first attempt on current problem step)
Time - number of seconds since last student action
timeSD - unitized number of seconds since last student action (unitized with reference to average and SD student time on the same problem step)
time3SD - sum timeSD over last 3 actions
time5SD - sum timeSD over last 5 actions
notright - 1 if Right = 0; else 0
hmwrong - how many incorrect (notright) answers has student given on this skill so far?
Helppct - number of help requests on current skill, divided by total number of problem steps student has encountered that involve current skill
Wrongpct - number of notright answers on current skill, divided by total number of problem steps student has encountered that involve current skill
Timepertat - total time student has spent on current skill up to current time
prev3 - how many of last 3 actions have involved same problem step as current action
prev5 - how many of last 5 actions have involved same problem step as current action
recent8help - how many of last 8 actions have involved help request
recent5wrong - how many of last 5 actions have been notright
optoprac - how many problem steps student has encountered that involve current skill
reason -- does problem step involve entering a reason why a previous step was correct (1,0)
ReasonAfterExampleB - reason = 1 AND student received worked example before commencing problem
Question1 - I don't remember
NumExampleSoFar - how many worked examples has student received so far
P(SLIP|TRIO) - Estimate of probability current action is a slip, from use of Bayesian Knowledge Tracing (Baker, Corbett, & Aleven, 2008); predicted variable for contextual slip detector development