Let

Xi = ith Common Wrong Spelling Word of some person.

Yi = ith Probable correct spelling word for Xi

Fi = The number of times Xi ­has been used

Now let us assume that someone miss-spell a word (say WORNGWORD) that is mapped (using Word auto correction) to Yi where WRONGWORD != Xi  and WRONGWORD != Yi . – Let the phenomena be called as Z

Let Zic = the number of times Z happened during a session against word Yi.

= the time between to consecutive Z phenomena

Let WCWS be the parameter that determines if the person using the profile be a fraud with respect to Common Wrong Spelling Word.

Then for every Z incident,

(This formed by the combination of the regression formula along with the decay model)

Here, α, β are constants.

If is the standard deviation from WCSW\_AVG (that will be calculated after every session).

If WCWS crosses WTHRESH, a password request will be triggered where WTHRESH will be scaled accordingly by

**Keystroke per min or KPM**

We can calculate net KPM by at the start of a typing start flag, till the end of the send button, let the in between time be **Time**.

Let is the threshold value, then if **KMPavg** crosses and stays above the threshold value for a time, then a trigger will fire to verify the user.

Now, after every time interval,

And **KMPTHRESH** will be adjusted by the user behavior by the deviation theorem and regression formula like before…

**Avg Word Per Min**

Same as KMP. But this time, including the time starts from starting of a session till the end, thus, we can also figure inactive time while staying online.

After every time, let be the number of words that leads to but these words are not , and be the number of words has been used (in this session), then

Now, after every session,

Now if Pacg(Xi) > .5 and Fi\_total > 200, then,

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Correct Word (Yi)** | Please | Download | Take care | … |
| **Misspelled Word (Xi)** | Plz | dwnld | tc | … |
| **Pavg(Xi)** | .9 | .8 | .96 | … |
| **Pcurrent(Xi)** | .8 | .82 | .99 | … |
| **Fi\_total** | 721 | 332 | 992 | … |
| **Wi** | .3 | .1 | .4 | … |

Let word weight for I be,

Where, again,

Overall misspelled deviation,

Now for every time, if MD is not changed (within a session), then

Now if MD > MDThresh for a 5T, then system will trigger a signal.