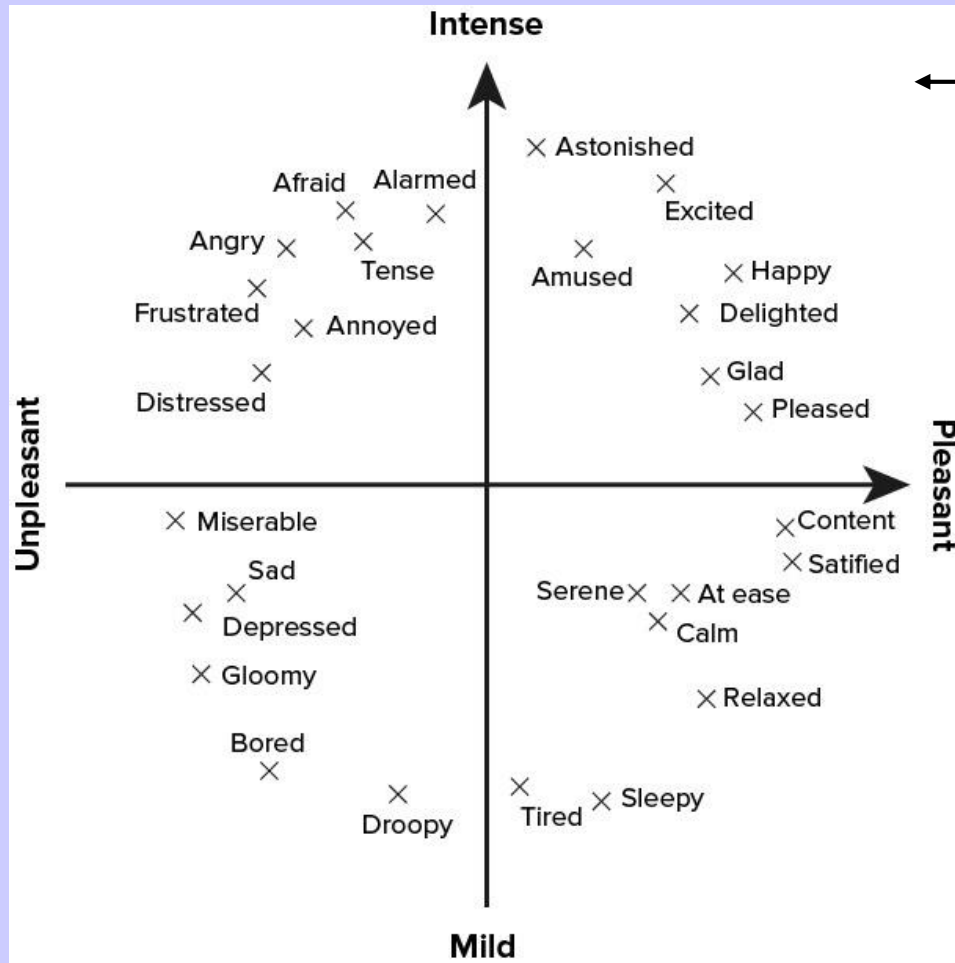


# Regression

By Nana Asiedu-Ampem

# How is regression used in MER?



← Thayer's Arousal-valence plane of emotion

Different musical pieces are mapped onto this plane of emotion by a machine. The quadrant they lie upon will determine the emotion they express

Regression deals with a continuous plane to resolve ambiguity problems that can arise when dealing with emotions of music

Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, 39, 1161–1178.

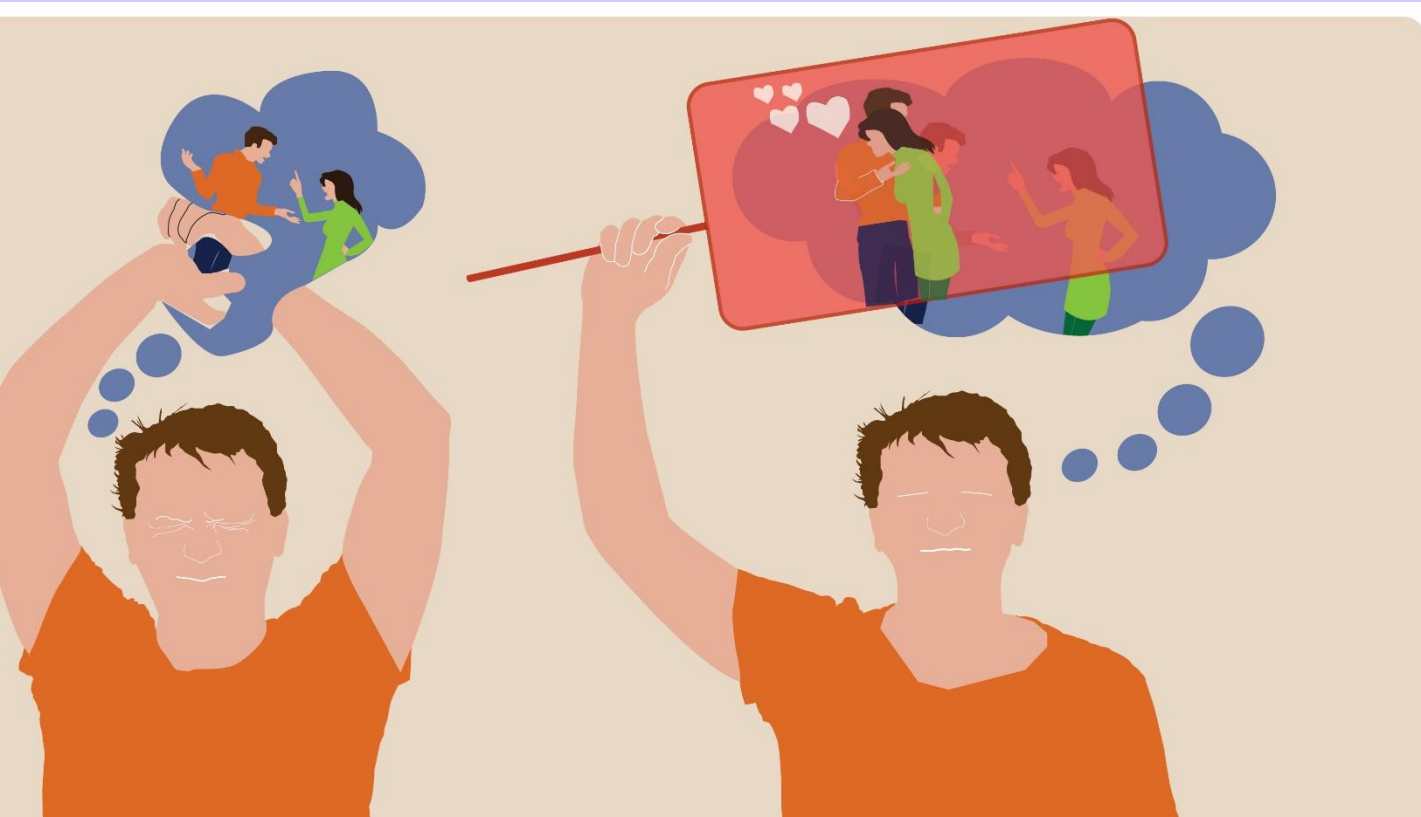
Yang, Y., Lin, Y., Su, Y. & Chen, H. (2008) A Regression Approach to Music Emotion Recognition. *IEEE Transactions on Audio, Speech, and Language Processing*. 16 (2), 1-1-10.

# Can a machine learn everything?

Our brains usually associates events that occur in our lives to the music we were listening to at the time.

In cases where a machine is trying to perceive the emotion of an individual depending on a certain music sample, memories could complicate the process

Is it possible to implement a learner to tackle these issues?



# Active Machine Learning

Machine learning algorithms can be incorporated into MER machines  
To allow better prediction accuracy.



- Machines stores results of their emotion evaluations in a memory bank.
- In future evaluations, the machine can reference the Memory bank to make more accurate predictions.
- This can increase the speed of a techniques process if It has to analyse large amounts of data e.g. musical features

<http://www.keepcalm-o-matic.co.uk/p/keep-calm-and-do-better-next-time-1/>

Tong , S. (2001) *Active Learning: Theory and Applications*. Philosophy. Stanford university.