

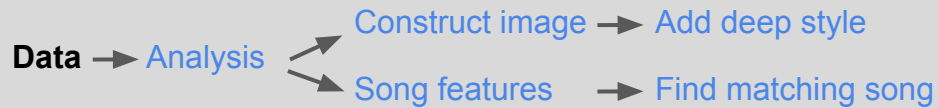


# Dream PAINTING

Discover the *song* and *artwork* of your dreams

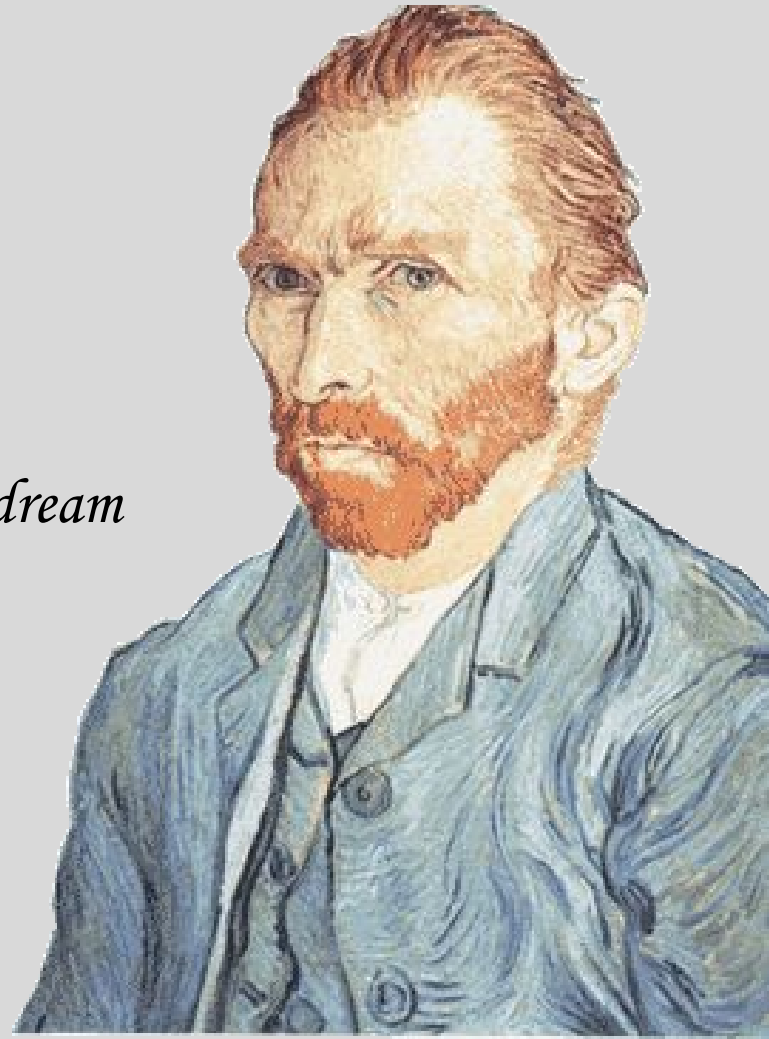
Lindsay Esola, Jesus Cruz, Sven van der Burg

# Gathering data: Siesta for Science

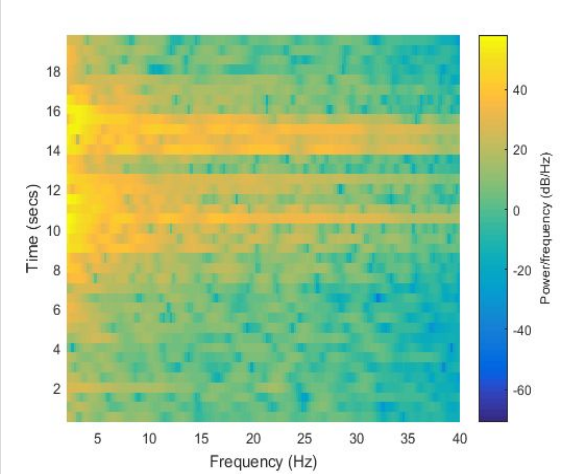
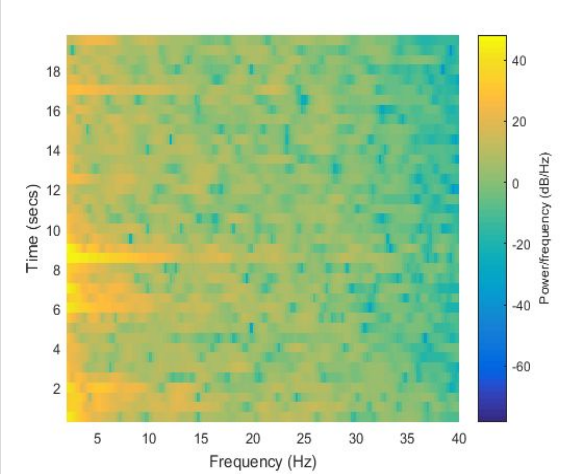




*I dream my painting, and then I paint my dream*  
*- Vincent van Gogh -*



# Constructing an image based on EEG features





Waking up with your song of the day

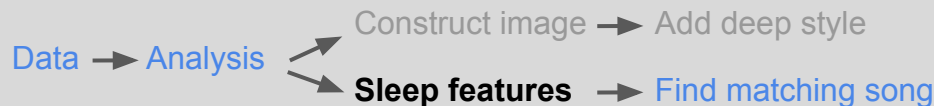


# Extracting features reflecting sleep patterns

- Power modulations in and around REM sleep: **Beta and gamma power**.
- 5min before REM sleep: low stable values in beta and gamma power.
- At REM sleep: maximum value in beta and gamma power ~1min into REM sleep.
- Continuous REM sleep: stable high values in both beta and gamma, with gradual decrease at the end of REM sleep. 0.38 0.23

[Ferri et al. 2001.](#)

$$1 - \frac{\text{Gamma}}{\text{Beta}} = 0.62 \quad \& \quad 0.77$$



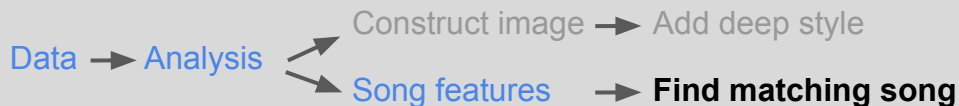


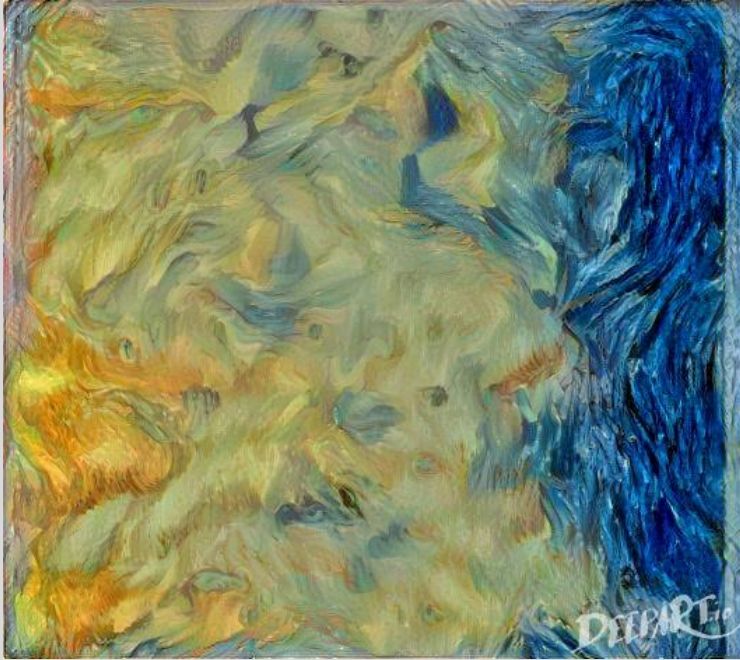
# Matching EEG features with a song in your personal playlist

Johann Pachelbel - Canon in D	Energy: 0.24
Pink Floyd - Wish You Were Here	Energy: 0.262
Ludovico Einaudi - Life	Energy: 0.268
The Beatles - Here Comes The Sun	Energy: 0.54
Lynyrd Skynyrd - Sweet Home Alabama	Energy: 0.605
Bon Jovi - Livin' On A Prayer	Energy: 0.687
Aerosmith - Walk This Way	Energy: 0.73
Journey - Don't Stop Believin'	Energy: 0.748
Coolio - Fantastic Voyage	Energy: 0.768
Andy Grammer - Honey I'm Good	Energy: 0.799
Earth, Wind & Fire - September	Energy: 0.809
Guns N' Roses - Sweet Child O' Mine	Energy: 0.911
System Of A Down - Chop Suey!	Energy: 0.929
The Prodigy - Smack My Bitch Up	Energy: 0.993



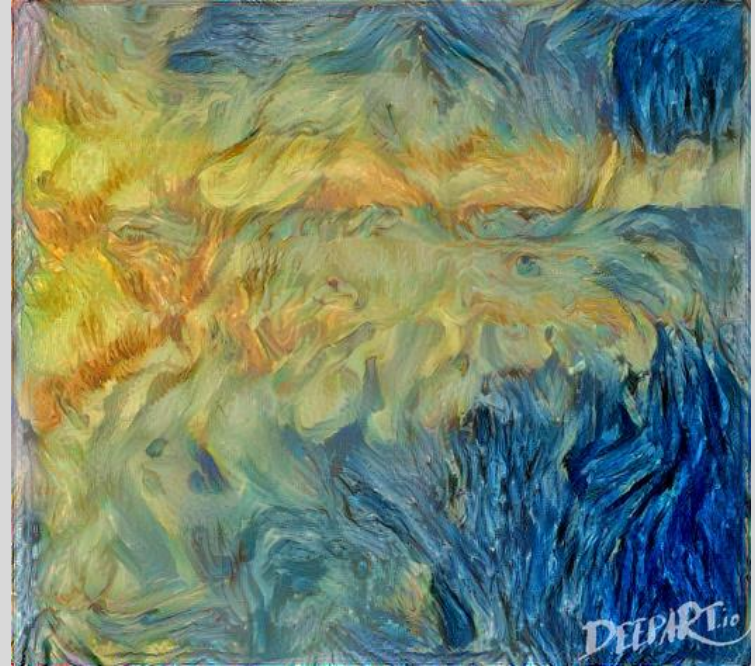
Energy is a measure from 0.0 to 1.0 and represents a perceptual measure of intensity and activity. Typically, energetic tracks feel fast, loud, and noisy. For example, death metal has high energy, while a Bach prelude scores low on the scale. Perceptual features contributing to this attribute include dynamic range, perceived loudness, timbre, onset rate, and general entropy.





Lynyrd Skynyrd - Sweet Home Alabama

Big wheels keep on turning  
Carry me home to see my kin  
Singing songs  
about the southland  
I miss alabamy once again  
And I think its a sin, yes



Coolio - Fantastic Voyage