

# Brain Machine Interface:

## A 21st century dynamic technology

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- Brain-Machine Interface is a technology that allows people to control devices using only the signals from the brain.
- The first world-wide experimental proof was achieved in 1988 in Macedonia (Bozinovski 1988)
  - a physical device, a mobile robot, was controlled using EEG alpha rhythm.
- However the real worldwide interest was shown in 21st century.
- The applications so far included movement of the cursor, hands-free typewriter, wheelchair movement, robot arm (prosthesis) movement, among others.
  
- My research in the area is anticipatory based brain machine interface.
- I introduced anticipatory brain potentials to the brain-machine paradigm in 2005
- I was the first in the world to achieve control of robot arm movement using these potentials in 2007.

# My Views On Open Innovation

- Open innovation means gathering information from various sources, “compiling” that information into an innovation (product or idea), and sharing it with the world
  - The Global Forum, or other conferences
  - Internet forums, blogs, social network sites...
- Types of open innovation
  - New paradigms
    - In BMI, that was controlling a robot using brain signals alone
  - Optimizations
    - E.g. the computer had been optimized lots of times since its inception
- Prerequisite for open innovation: a challenge to be overcome
  - Example in BMI: robot arm control with many motors using brain signals alone
  - Another example in BMI: cortical blindness