

# Artificial Creatures Topic Assignment

1. The device I selected for this assignment is the bike. I believe riding a bike could be significantly improved with the use of homeostasis. One factor of how one experiences a bike ride are the gears. If the gears could learn by watching your behaviour, it could adjust the gears by itself, eventually. For instance, if the user is switching gears because they are approaching a big hill, the bike could measure the surroundings, like wind speed and the slope, and adjust the gears accordingly. Next to this, it could also measure the ease with which the user is pushing the pedals. If the user is getting tired and needs more force to push the pedals, the bike could sense this and switch gears to make it easier for the bike rider. When the gears observe the behaviour of the user over some time, it could anticipate certain behaviour of the user, and respond to this by switching the gears. Long distance bike rides would benefit from this, because when the gearbox is used optimally, it gets easier for the user and he/she could ride their bike more relaxed, without having to worry about switching gears.
2. A really interesting use of homeostasis in technology is an implantable cardiac defibrillator. This is a device that is implanted in patients who are at risk of heart problems resulting in death. When an arrhythmia happens, this device can detect it, and as a reaction to this give the user an electric shock, which should correct the arrhythmia. This could save countless lives because in most cases help might not arrive in time. We have Dr Michel Mirowski to thank for this astonishing piece of technology. His work in the 70's led to the development of the ICD.