**Juan Sandoval**

*Self-Balancing Motorized Skateboard*

**Features**

**Motor**
- Power: 350W
- Voltage: 24V required
- Current: 20A continuous

**IMU 6DOF**
- 6 Degrees of Freedom
- Gyroscope/Accelerometer
  - 10-bit resolution
  - Resolution increases with $g$

**Micro-Processor**
- 32-bit Arm processor
- Arduino Compatible
- I2C capability
- 15 PWM pins

**Applications**
- Easy Transportation from point A to point B

**General Description**

The self-balancing skateboard provides an alternate easy way of transportation. An Arm microprocessor running a PID loop will receive position from IMU accelerometer/gyroscope and balance the board. PWM signals will be generated from PID output.

The board will move forward or backward depending on user movement. If user leans forward the board will go forward, if user moves backward then board will go backward.

**System Block Diagram**