nSt::Scorpio

- **Design I**
  - **Sensors**
    - Sonar sensor — detect distance to obstacles forward
    - Light sensor — detect light level
    - Sound DB sensor (deactivate?) — detect vocal order (compare with Sound DBA)
    - Sound DBA (sensor) — detect loud human voice/sounds (waits, resets)
    - Touch Sensor
      - Detect pain(several fast presses)
      - Detect reward (unique long press)
  - **Motors**
    - Left 3 legs
    - Right 3 legs
    - Tail deactivated
  - **AI**
    - Use simple AI
      - rules
      - real time polling of sensors
      - one-off orders to motors (start motor X till told otherwise)
  - **Goal**
    - Find bright spot (>X%) as quickly as possible
      - make rounds and evaluate brightest direction
      - follow found direction
    - if found within X mn, leave spot and Repeat
    - if not found, fail sound + wait for input
- **Deadlines**
  - Design I: December 2010
- **Architecture**
  - Low-level libs
    - AForge.NET
    - own C# library
  - "NxtControl" lib
  - "NxtBot" app
- **Todo**
  - Use HTM AI
  - Use Evolutionary algorithm for fast pathfinding (find nice DNA)
  - Use 3 groups of legs

Continuous touch

Touch sensor outputs a continuous flow of values ranging from 0.0 to 1.0 and back to 0.0 for each detected press. Short succession of presses should yield values above the 1.0 threshold.

RandomWalk

Create a random walk behavior

Continuous sensor values

Make all sensors return continuous (double instead of ushort) values.

MotorFeedback

Get feedback about the position of the motor(s) and try to determine the position of the bot (ground rotation angle, centimeters walked)

SyncedMotors

Create motor that in fact command two motors in sync