Communications Technology Group

WIRELESS ENABLED REMOTE CO-PRESENCE (WERC)

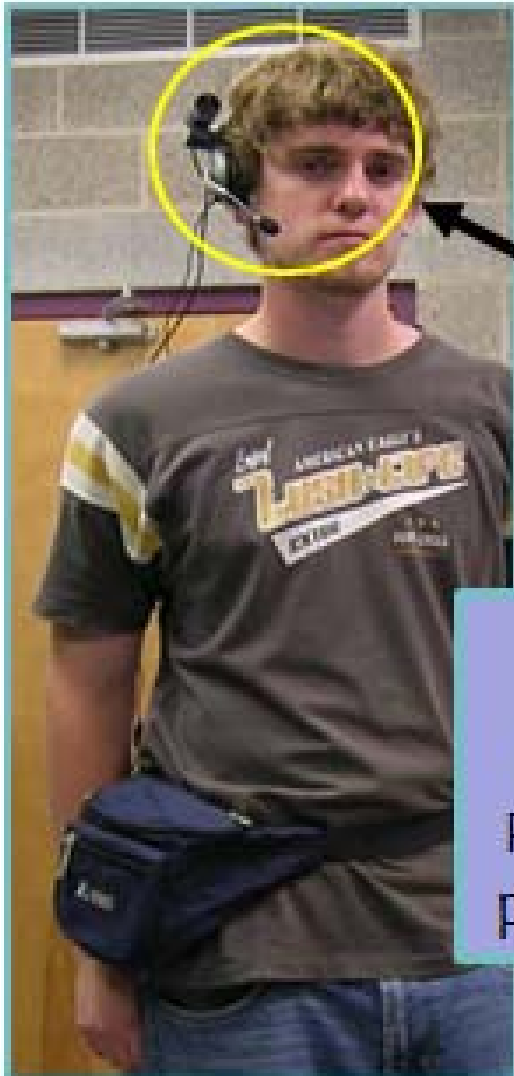Chad Clemens & Stephen Powers

Presentation Overview

- Project background

- Recent project work

- Future project goals

Project Background

- Project Motivation

- Overall Objective

History

2011

V. 1.2

PC-based prototype

Android Shift

2013-2014 Project Goals

- StressAlyrter
  - Ehealth Sensors
  - Q-Sensor
    - Testing
    - Application Programming Interface
  - Voice and Artificial Neural Networks

StressAlyrter

StressAlyrter will be able to trigger an Automated Stress Meltdown Intervention— while alerting to summon personal support

Taniqua — Fashionista

Tyler

Taniqua

Anash

Tanqiqua Smale
Fashionista Outlet
Howard Valley Mall

IND: 5
PROF: 4

Taniqua cool-down protocol:

1. Think the names of your five cousins
2. Watch the other person's chin, not their eyes
3. Look surprised, as if you just remembered something important and say, "Would you please excuse me ma'am/sir, I'll be right back."
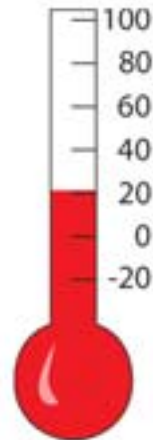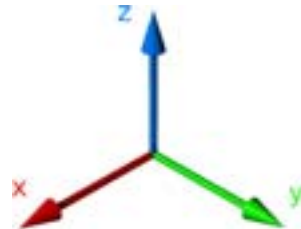
Ehealth Sensors

Q-sensor

- Worn around wrist
- Galvanic Skin Response
- Collects and then
viewed after currently

Q-sensor

Q-Sensor

Voice & ANN

- Need for a discriminator → Voice
- Use an artificial neural network to learn the differences and then predict outcome
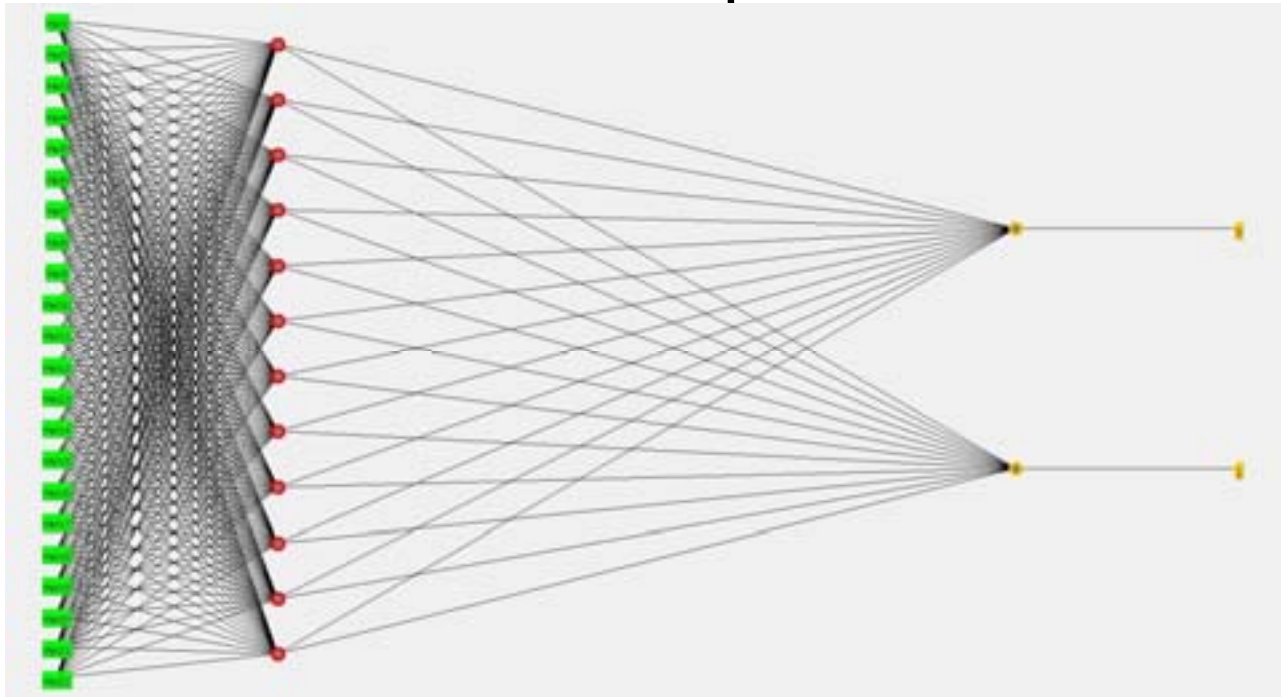
Neural Networks

- Process of using artificially created neurons as predictors
- They are taught using some of the collected data, and then can make predictions
- Taught through backpropagation

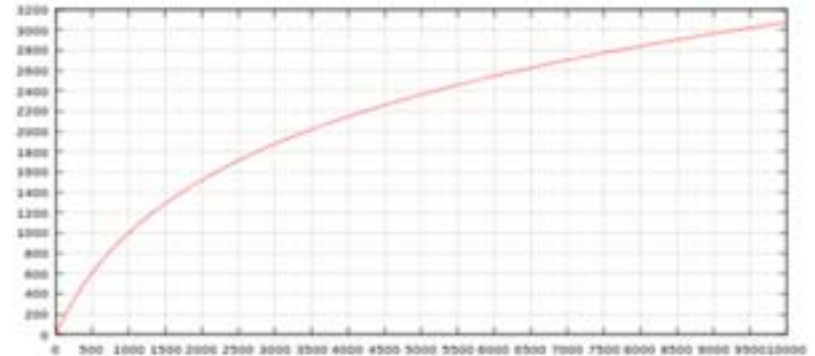# Neural Network Process

- Sample collection
- Sample transformation and gathering of needed energies
- File conversion
- WEKA: Waikato Environment
 for Knowledge Analysis
- 95% success rate

Outcomes

- Q-sensor test runs completed
- Ehealth sensors investigated
- API progress
- Neural Network successfully completed as stepping stone

Future Goals

- Finish API for Q-sensor integration
- Run tests using a neural network and positive/negative stress samples as the inputs
- Automatic Shutoff Solution

Acknowledgements

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Questions?