DYSARTHRIA

➤ Motor-speech disorder
➤ Motor problems using a full-size keyboard
➤ Cannot use speech recognition as an alternative method

Dualpad
MOTIVATION

Using traditional input devices difficult for people with neurological diseases

➤ Carpal Tunnel Syndrome
➤ Arthritis
➤ Parkinson's disease
➤ Muscular dystrophy
➤ Multiple sclerosis
➤ ALS
➤ Dysarthria
➤ Apraxia
EXISTING SOLUTIONS

➤ Steady Mouse
➤ Click-N-Type virtual keyboard
➤ Eye tracker
➤ OptiKey
➤ DualScribe
➤ Proloquo
➤ NextUp
➤ LightWriter
WHAT IS MYOFLEX?

➤ Combination of multiple input devices to effectively interface with the computer.

➤ **Eye tribe** for precise movements, gesture support through the **Myo Armband**.

➤ Flexible enough to support multiple input devices in the future.
HIGH LEVEL DESIGN

Eye tracker
Server

MYOFLEX

MYO Connect
PROS AND CONS

Pros
➤ Greater productivity
➤ Much cheaper
➤ Finer control
➤ Platform to interface between many more devices

Cons
➤ Restricted scope for ability-based design
➤ Eye tribe requires very close proximity, although the arm band can work at much larger distances
RELEVANT WORK

➤ **GRANDMA**
Specifying gestures by example

➤ **SUPPLE**
Ability-based design

➤ Multiple-concatenated command gestures

➤ Voice and gesture as input
  "Put that there"
REFERENCES

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➤ TWEND: Twisting and Bending as new Interaction Gesture in Mobile Devices

➤ Novel, minimalist haptic gesture interaction for mobile devices
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➤ "Put-That-There": Voice and Gesture at the Graphics Interface
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➤ Specifying gestures by example
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➤ http://www.waparkinsons.org/resources/assistive-technology

➤ Apparatus and method for executing multiple-concatenated command gestures in a gesture based input system
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➤ OnScreenDualScribe: A Computer Operation Tool for Users with a Neuromuscular Disease

➤ Ability-Based Design: Concept, Principles and Examples