RESEARCH PRESENTATIONS

COGNITIVE

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Methods:

Motor psychophysics

Clamped visual feedback

Research interests:
• Interactions between adaptation and reward learning
• How practice affects motor planning
• How the brain combines multiple sources of information

Computational modeling

\[ x^{(n+1)} = A \cdot x^{(n)} + U(e^{(n)}) \]
\[ y^{(n)} = \left(1 - V_l^{(n)}\right) \cdot x_n + V_l^{(n)} \cdot V_d^{(n)} \]

Population Vector

Gain Modulation

\[ x^{(n+1)} = \gamma_A \cdot A \cdot x^{(n)} + \gamma_U \cdot U\left(e^{(n)}\right) \]

Dual Error

\[ x_{SPE}^{(n)} = A_{SPE} \cdot x_{SPE}^{(n)} + U_{SPE}\left(e_{SPE}^{(n)}\right) \]
\[ x_{TE}^{(n+1)} = A_{TE} \cdot x_{TE}^{(n)} + U_{TE}\left(e_{TE}^{(n)}\right) \]
\[ x_{Total}^{(n)} = x_{SPE}^{(n)} + x_{TE}^{(n)} \]
Activities to Promote Movement & Cognition

- Parent-child interaction
- Handling
- Positioning
- Play with objects
- Motor & cognitive outcomes (language, social-emotional)

Tools for (Re)habilitation

- Exoskeletal garments
  - Playskin Lift™
  - Playskin Air™
  - Hug n’ Move
  - Ankle support
- Assistive & rehabilitative effects

Activity- & Technology-Based Pediatric (Re)habilitation
Michele A. Lobo, PT, PhD - Move To Learn Innovation Lab, Super Suits
FUNctional Fashion & Wearable Technology
Jared Medina – Associate Professor
Psychological and Brain Sciences