About Me



NAME

Cliff Whitworth, Ph.D.

TITLE

Soon to be: Clinical Assistant Professor, Anuradha and Vikas Sinha Department of Data Science

YEARS AT UNT

Since 1993

RESEARCH FOCUS AREAS

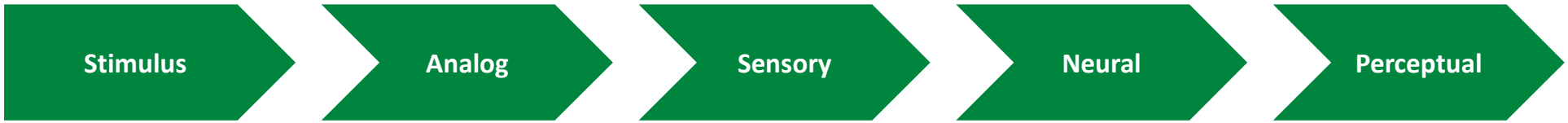
- Psychophysics
- Embodied AI and agents
- Fast and slow thinking / causality
- Computer music / improvisation

From Music to Machines

- BS, Music Performance
- MM, Music Composition
- PhD, an information technology field
- At UNT since 1993
- Now: Data Science and AI
- A lifelong dream

How We Sense: Hearing and Seeing

- What can we learn from ourselves and implement on machines
- Five stages, from stimulus to perception
- Student projects: Python ear and eye simulations (Sally's ears and eyes)
- TAMS motivation: EEG Thought to Text, Thought to Action, Computational Neuroscience
- Open ERP CORE data, MNE-Python



Embodied AI: Sally

- Sally: a conversational machine that hears, sees, and acts
- Machine cooperation
- Ear and vision models transferred to machines
- Student volunteers

Kahneman’s Fast and Slow Thinking

- Fast: reflexes, detection, quick replies (Reinforcement Learning)
- Slow: local model reasons when needed (VLA WAM)
- Pearl’s ladder of causation: see, do, imagine
- Key question: which rung can we afford?
- Borrowed from human dual-process thinking

Thank you Dr. Sharma

To all of you, my family