

# Best Practices for the Evaluation of Adaptive Instructional Systems

IEEE Project 2247.3

I/ITSEC Special Session  
Wednesday, 4 December 2019  
1600-1730, Room S329, C015

Moderator: Eric Domeshek, Stottler Henke Associates, Inc.

# Adaptive Instructional Systems (AISs)

*Computer-based systems that  
use **Artificial Intelligence** to **guide individualized learning***

- **Learning:** Any kind of learning...
  - Formal or Informal
  - Education or Training
  - Individual or Group
- **Guidance:** Any kind of pedagogical intervention...
  - What topics/form of instruction to offer, how, and when...
  - What exercises/experiences to offer, at what level, pace, granularity ...
  - What assistance/obstacles/questions to offer (proactively, reactively) ...
- **Individualization:**
  - Learning objectives or goals
  - Learner's needs, preferences, and states
- **Artificial Intelligence:** Any kind of AI technology...
  - Knowledge models – of domain, learner, tutor, and (virtual) teammates or adversaries
  - Behavior systems – for above virtual agents
  - Machine learning – to build and/or improve above models/behaviors

# Panel Focus: Best AIS Evaluation Practices

- AISs are knocking on the door to enter the real world
  - Many approaches; many applications
  - High expectations; varied performance
- Consumer Quandary
  - What is an AIS?
  - What makes AISs good, or better than other learning support mechanisms?
  - What makes one AIS better (or more appropriate to some application) than another AIS?
  - How does a consumer find or generate answers to questions like these?
- Panel Brief
  - Suggest information about AISs that would be useful. for consumers
    - Features; Benefits of features; Overall system impact/effectiveness
  - Provide schemes for organizing the above info
    - How to conceptualize, collect, present, and interpret that information

# Panel Participants

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# Session Format

*Goal: Foster discussion of evaluation needs and best practices*

- Panelists' Position Presentations
  - Up to 10 minutes each
  - Please hold questions until all have had their chance to get in the game
- Questions and Answers
  - Then fire away...