Notes on modeling, IST 402
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Why do this?
• The reasons
• Examples applications, example models, example success stories

How to model
• Levels of models, knowledge, PSCM, symbol level
• Cognitive architecture, answer to UTC, what does it mean, breadth of the vision
• Cognitive architecture, what are at least one?
• Soar, what’s the high-level structure, diagram, “how the gears clank and how the pistons go . . .”
• Mapping from soar architecture to data about humans, RTs, errors, strategies, VPA
• Bonus points: why it might not be (fully possible)
• Soar, low level details, why and how they bite, how to bite back, how simple models work
• The role of simulations, something for models to do, and how they model vision and motor
• The role and use of High-Level Behavior Representation Languages (HLBRL)
• What’s wrong with current architectures?
• Bonus: how to fix them!

How to build models
• From anecdotes, raw insights, quirks, and simple prejudice
• Ritter and Larkin paper
• The role for task analysis,
• How to build models from scratch
• Model libraries, and building from them

How to test/prove models
• Overview of providing evidence for models
• Grant’s paper, not to prove, but provide support for, the role of paying heed to previous models, previous ways of providing support, graphing, writing.
• Something is better than nothing
• Theories of science, theories of data and data/theory comparison
• The role of insight and insights

Insights
• Learning is ubiquitous
• Learning has many parts
• Interaction counts
• Usability counts in calculus, why not modeling?
• Verbal protocols lag about 1 second from motor outputs and cognition

How to read papers/find out more
• What’s a paper, conference, journal, workshop, tech report
• Read for content in the end anyhow

Further comments
• Train you to be comfortable doing uncomfortable tasks. And it’s worth it.
• Successful people are willing to do things that unsuccessful people are not willing to do