# Simple Speech Recognition

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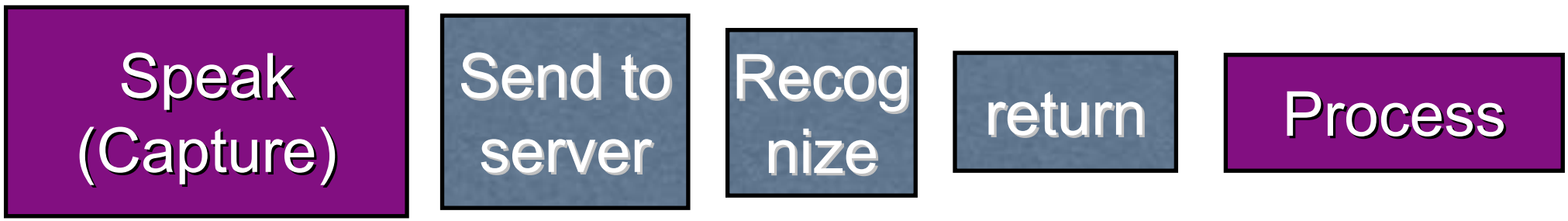
# Speechbuilder +/-

- Speechbuilder is a great tool, but
  - Grammar is limited
  - Forces use of “action” and “attribute”
  - “Domain” has lots of components
    - complicated compile of domain pieces -- vocabulary, natural language, scoring
  - Must start server with domain framework

# Simpler than S-Builder

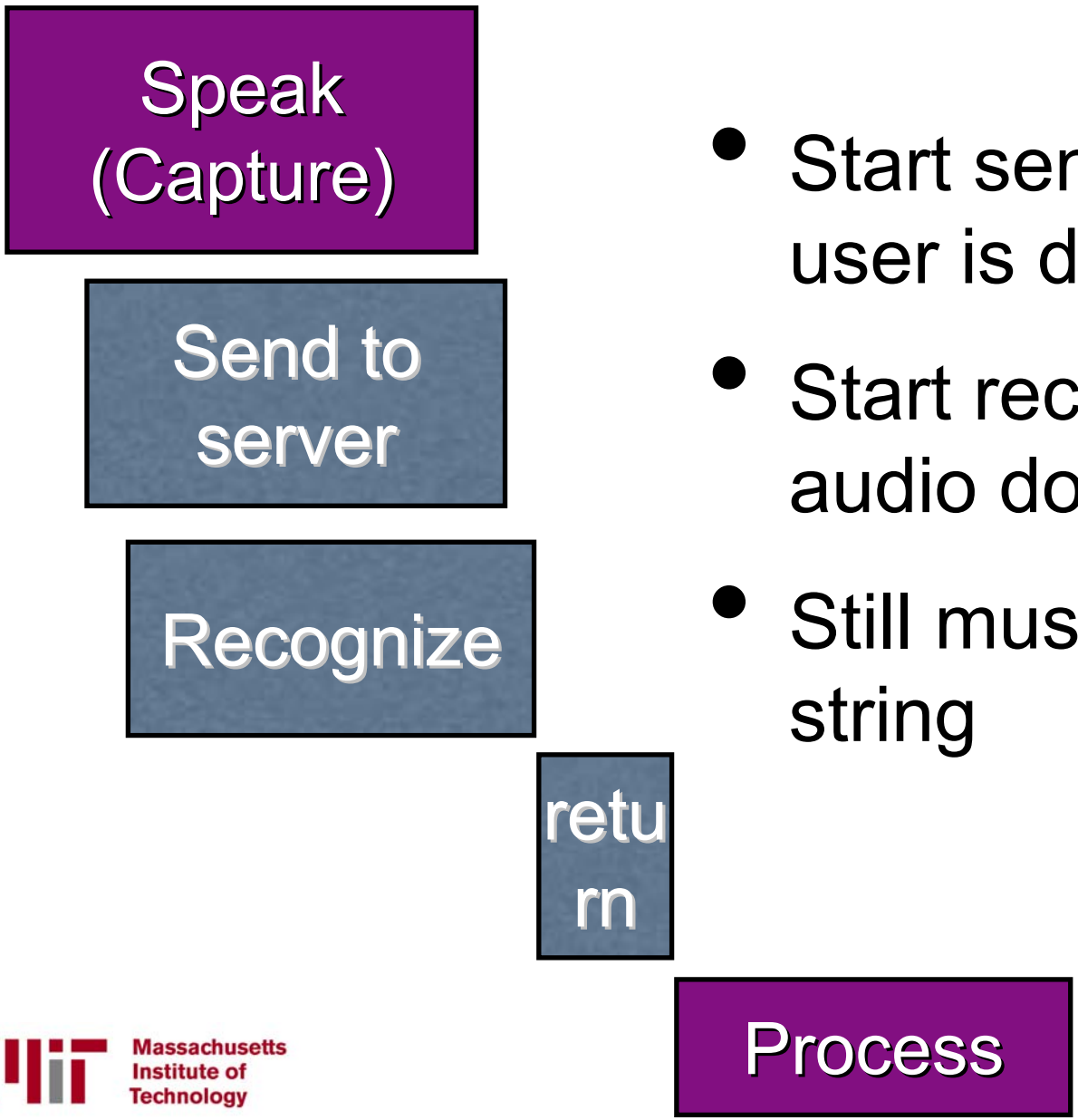
- Simple:
  - send audio to server
  - receive string in the domain
  - but what about domain?
- open a connection with server w/ domain
- stream audio over connection; get string when done

# Streaming Audio




- Long process:
  - each step can be seconds.
- Streaming can speed things up (a lot)

# Streaming Audio




- Start sending audio before user is done speaking
- Start recognition before audio done arriving
- Still must wait for return string

# Streaming recognition

- Recall, recognition proceedings in several stages:
  - waveform to phonemes
  - phonemes to words
  - words to sentences
  - Natural language filtering
  - Grammar Parse

Much of this can be pipelined

NL requires whole sentence

# Speed up process

- Do not do natural language filtering
- Do not do very limited vocabulary
  - (what should one do with extraneous words -- fastest is to recognize them since ignoring them slows down parsing)

# more speed

- pipeline whole process.
- what about grammar parse?
  - do a Virturbi search
  - get back confidence levels