Efficient Population of Structured Data Forms Using Syntactic Constraints and Intermediate Text

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• Filling Forms
  • Major Frustration of EHR/EMR?
  • Mayo Clinic Proceedings July 2016:
    “Clerical burden and burnout in US physicians”
  • GUI 2d layout mixes concerns:
    1. display of data
    2. acquisition of data

• Information Flow
  • Elements found / decided out-of-order / Sometimes different pages & screens
  • Doctors should not have to wait / Do not like to wait
  • Source of error / Incomplete documentation

• Mouse Movement & Selection
  • CCF SemanticDB outcomes reporting Bottleneck
  • Mouse-to-Keyboard-to-Mouse is for Novices
  • Minimized mouse movement, resized targets
  • Scribes / Docs are experts, need Expert Modes

• Auto-Generated Shortcuts

• Syntactic Matching
  • Nothing else matches NNN-NN-NNNN but Social Security Number
  • Where there are two dates, MM/DD/YY
    1. Define priority or
    2. Require explicit shorthand

• Conclusions
  • Efficient in a real-time documentation setting
  • Bridges the gap between natural language extraction and keyboard shortcuts
  • Future statistical and database hinting
  • EHR vendors should have this kind of R & D