Enabling Effective Data Interaction for Domain Experts

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Increase in EHRs has led to an increase in availability of data which require interaction from domain experts. This introduces two key challenges: reducing expert burden during input and allowing effective expert interaction during analysis.

**Future Work**

**Structured Data Storage**
- Annotations outside form fields are stored as unstructured text and not available for querying.
- Opportunities for automatically structuring annotations using statistics and database schema.
- These signals could also be used to update database and form design.

**Guiding experts to Insights**
- Raw data is difficult to digest.
- Exploratory visualizations are iterative and tedious.
- Small changes are not necessarily perceivable on visualizations.
- Optimal visualization for a given dataset.
- Provide cues to expert on possible insights.

**Results:** On average there is 27.5% reduction in form completion time between the original and automatically redesigned forms.

**Results:** Domain experts are on average able to fill in 56,000 cells in just 148 edits, within an hour, while the manual process took weeks.