Allen Cypher’s Portfolio

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Three recently delivered products
Three 3-minute demos
Three interaction design examples
Three recently delivered products


3. IBM BigInsights Information Extractor (2016) creates text analytic miners for non-programmers.
At Socratic Arts, students and mentors converse in the Slack app.

Automentor finds previous responses to similar student questions and suggests them to mentors, directly inside Slack.

A mentor can view alternative responses in the Wizard Responder:
In the Wizard Responder, the mentor can browse saved responses, and select and edit a response.

I conducted a needs assessment, designed the Wizard Responder and the Slack interface, and implemented the AI engine in Java and the interfaces in JavaScript and the Slack API.
I prototyped the UX for numerous “smart” features. For example:

A user can create a New Column by Example to extract the initials from the Name column. The user types JA in the first row, and the rest of the column is generated automatically. Colored highlighting indicates how the underlying algorithm determined the generated entries.

The system can also Show Unsure Values, …
... displaying reasonable alternative values, and the user can make a correction.

I implemented these features in javascript to create a working prototype. The product manager included the features in the product, and the development team implemented them in the shipping product.
I designed the interface and interaction, won a competition against an alternative design, and joined the product team and implemented the design.

An extractor created without programming. Matching text is highlighted and automatically extracted.
Three 3-minute demos of innovative interaction design

1. **CoScripter** (2007) human-readable and computer-executable recording of user actions

2. **Stagecast** (1995) a mouse-only visual programming language for creating simulations and interactive games

3. **Eager** (1991) one of the first intelligent agents. Introduced “anticipation highlighting" to show a user what a computer-generated program will do
Three interaction design examples

1. Creating text miners
   - wireframe
   - scenario
   - storyboard

2. Automating data entry
   - mockup

3. Visual programming
   - prototype

Revenues from the software segment were $5.6 billion
Creating text miners

Text Analytics uses text miners to recognize meaningful concepts such as street address, date, or price in ordinary text.

IBM had a tool that enabled programmers to create text miners using the AQL language.

I designed a new product to enable non-programmer subject matter experts — such as business analysts — to create their own text miners.

I created wireframes and detailed scenarios with storyboards.
I created three scenarios and storyboards which were used for comparison with a competing design, and my design was chosen for the product.

I then joined the software group and wrote product code in Javascript and Dojo to implement the design.

### Scenario for creating text miners

#### Group2 Tooling UI

**Quarterly Revenue Manual Scenario**

A financial analyst at Schröb wants to get quarterly revenue figures for IBM for the last 10 years. The analyst has available IBM’s quarterly press releases which contain this information.

**Input**

Several "Quarterly Report" Text Documents. See the Resources section of the Rightsights Text Analytics Tooling (Group 2) Activity at https://www-connections.ibm.com/activities/service/html/mainpage/activitiespage/8080583a-d4f7-412c-9a3f-e5f6791151

**Output**

For each document, the Year and Quarter of the document, and the revenue for each IBM Segment reported in the document.

**Detailed Scenario**

The user looks over the text in a few of the documents. She understands what the output should be, and believes that she could do the task by hand. She types “Collect quarterly revenue figures for every IBM segment” into the task specification textbox. The tooling does not produce any useful results automatically.

She decides to manually develop her extractor based on the document IBM Quarterly Report Q42006 at https://www-connections.ibm.com/activities/service/download/forms/317138c-e0-de47-97fe-7e554585a50482006.txt

**Using a Prebuilt concept**

...  

**Creating a new Dictionary**

...  

### Creating new Phrase concepts

...  

#### Generalizing Phrases

The user is now ready to construct generalized phrases to match the relevant occurrences of revenue.

a) To handle

- Revenues from the Software segment were $5.6 billion
- She generalizes the phrase to:
  
  Revenues from the **segmentName** segment were **$numberWithDecimal,$Bill,$Trillion**

b) To handle

- Revenues from the Systems and Technology Group (S&TG) segment totaled $7.1 billion.
- She generalizes the phrase to:
  
  Revenues from the **segmentName** segment were **$numberWithDecimal,$Bill,$Trillion**

where **$numberWithDecimal,** is a dictionary, and she adds “Systems and Technology Group (S&TG)” as a synonym of “Systems and Technology Group” in the **segmentName** dictionary.

She will probably also want to select the setting for this concept to allow arbitrary whitespace.

b) To handle

- Segment revenues from Global Technology Services increased 7 percent (4 percent, adjusting for currency) to $8.6 billion
- She generalizes the phrase to:
  
  Segment revenues from **segmentName**: **bigDollarAmount**

where she has created a new concept called **bigDollarAmount** from the generalized phrase **$numberWithDecimal,$Bill,$Trillion**

where **$** is a prefix concept that matches arbitrary text, with settable parameters.
Three examples
Miners
Storyboard

Creating text miners (continued)

Storyboard for the Generalizing Phrases section of the above Scenario
Excerpts show the user creating a Big Dollar Amount extractor, to match text similar to $17.2 million

1. Select an example phrase to generalize

2. Generalize 5.6 to Number

3. The generalization is inserted

4. Continue generalizing to get Big Dollar Amount Phrase

5. The user now runs the generalization on a new document, and the phrase Revenues from the Global Financing segment totaled $620 million is matched
There are workers at IBM whose job is to enter spreadsheet data into web forms. I conducted interviews to assess their needs, and then implemented CoScripter Tables, which is based on my earlier CoScripter product. Workers enter one row, and the tool automatically enters all of the other rows.
As part of Alan Kay’s project to fulfill his Dynabook vision,
I co-invented a visual programming environment that
• enabled 10 year olds to create their own interactive video games for the web, and
• learn the concepts of object-oriented programming in the process.
I created multiple approaches for the interaction design,
and we jointly conducted numerous user studies and
implemented a prototype.