Magic Ink

Summary of Bret Victor's Paper

Presenting Information

- Much of Bret Victor's thinking is now in the mainstream.

- The focus is on how we present and communicate information.

- And what computing can do to make that communication go better.

- He distinguishes between information software, communication software and manipulation software.

- Focus is on information software.

- His exposition is clear and well-motivated.

Redesigning: Old Design

17 Main St., Lilliput   Theater Info | Map It

Grapes of Khan, The
Rated PG-13, 1 hr 22 min
Showtimes: 11:00, 4:15, 5:20, 7:45, 9:55, 10:10

Rainman Forever
Rated R, 1 hr 33 min
Showtimes: 11:55, 3:00, 7:15

Rent and Rentability
Rated PG-13, 1 hr 43 min
Showtimes: 1:15, 5:15, 9:30

Little-End Cinemas [Add to My Favorite Theaters]

47 Main St., Lilliput   Theater Info | Map It

Die Hard With More Intensity
Rated R, 1 hr 47 min
Showtimes: 11:55, 1:15, 2:30, 3:50, 5:05, 6:25,
7:40, 9:05 10:15

Hairy Plumber and the Goomba of Doom
Rated PG, 2 hr 10 min
Showtimes: 11:30, 1:35, 3:40, 5:45, 7:50, 10:00

Rainman Forever
Rated R, 1 hr 33 min

Rent and Rentability
Rated PG, 1 hr 43 min

What Might People Want to Know?

- What movies are showing today, at which times?
- What movies are showing around a particular time?
- Where are they showing?
- What are they about?
- Are they good?

New Design

Rainman Forever
: An autistic man fights crime on the streets of Gotham.
oll, Dustin Hoffman, Jim Carrey, Jet Li
terminable minutes. I counted them." (Ebert)
an excellent driver in a terrible movie." (Boston Sun)
. Definitely a flop..." (SF Chronicle)

Old Joe's Showhouse	11:55		3:00			7:15	
AMC Lilliput		1:25	2:45	4:20	6:15	7:30	9:25	10
UA Easy Street	12:45		3:00		5:00	7:20	9:00
Gulliver Theater		1:40		4:25		7:20		10:0(
Little-End Cinemas		2:15		4:45		7:15	9:35

Die Hard With More Intensity
a: A streetwise cop confronts loneliness in Tokyo.
oppola, Bill Murray, Bruce Willis, Jet Li
dinarily powerful ... A masterpiece of cinema." (Ebert)
iful and haunting." (filmscritic.com)
s slow but packs a punch." (Boston Sun)

AMC Lilliput	11:45 12:40	2:00	3:30	5:00	6:30	7:30 8:30	9:50
	12:00 1:20					8:05	9:15 10:1
UA Easy Street	1:00	2:30	4:30		7:00	8:50	10:0(
Landmark Quinbus			4:30			8:00	10:0(
Little-End Cinemas	11:55 1:15	2:30	3:50	5:05	6:25	7:40	9:05 10:

Hairy Plumber and the Goomba of Doom
y: Mario and Luigi attend a school of wizardry.
Spielberg, Daniel Radcliffe, Emma Watson, Jet Li
s good as the others, but still a visual treat." (Ebert)
oys are back and better than ever." (filmscritic.com)
of the series won't be disappointed." (Boston Sun)

AMC Lilliput	12:00	2:25	4:45	7:05	9:25
UA Easy Street	12:40	3:55		7:15	10
Landmark Quinbus	12:05	2:45			
Gulliver Theater				8:30	1
Little-End Cinemas	11:30	1:35	3:40	5:45	7:50	10:0(

Rent and Rentability
nce: Dissimilar sisters seek husbands in the East Villiage.
e, Emma Thompson, Kate Winslet, Jet Li
r adaptation of the Broadway hit." (Ebert)
tear-jerker. Keep your hanky handy!" (filmscritic.com)

Old Joe's Showhouse	1:15		5:15		9:30
Gulliver Theater	12:35	2:20	4:55	8:20	
Little-End Cinemas				7:00	9:30

The Little Schemer
nture: An elephant journeys to find Lambda the Ultimate.
an & Felleisen, Car, Cdr, Cons, Cond
is magnificient! ... Add this movie to your list!" (Ebert)

PLT Arthouse	7:30	9:30

What can software add?

- The previous redesign is mainly to do with graphics and presentation.

- So it says what design can do for software.

- But… what can software do for design?

- Bret Victor says the key is "context" – context is stuff like time, place, history, interest, …

What software is good at

- Software can:
  - infer the **context** in which its data is needed,
  - **winnow** the data to exclude the irrelevant, and
  - **generate** a graphic which directly addresses the present needs.
- Context is always approximate in some sense.
- This is qualitatively different from older forms of information presentation.
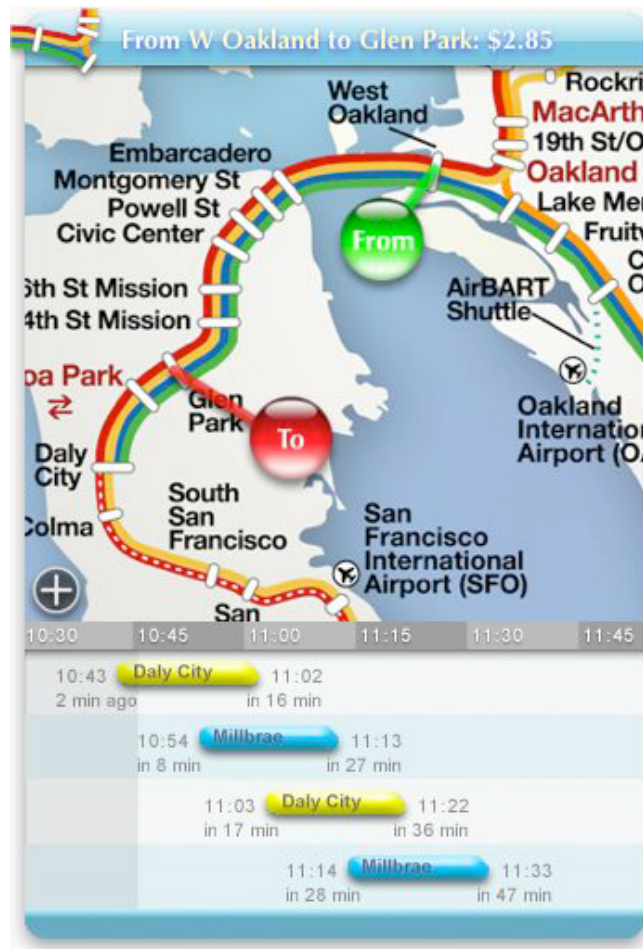
Getting a train

Adding time

More detail

Integrating data

Navigating time

Navigating space

Summary: Information Software

- Software design consists of graphic design (drawing pictures) and industrial design (allowing for mechanical manipulation).

- Information software is for learning an internal model. Manipulation software is for creating an external model. Communication software is for communicating a shared model.

- Manipulation software design is hard, but most software is information software.

- Information software design is the design of context-sensitive information graphics. Information software is not a machine, but a medium for visual communication.

Summary: Context

- Context can be inferred from the environment, which can include physical sensors, other information software, documents created with manipulation software, and data such as email which acts as a user profile.

- Context can be inferred from a history of past environments and interactions. Last-value predictors provide a rudimentary approach. Learning predictors can infer patterns and make dynamic predictions.

- Context can be inferred from user interaction, but only as a last resort. The best way to reduce or eliminate interaction is through information-rich graphic design that uses the environment and history. Remaining interaction can be reduced with graphical manipulation, relative navigation, and tight feedback loops.

Summary: Information Software

- The information software revolution will require public recognition that information software is a medium of visual communication, designers with talent, skill, and tools, simple and general platforms, and an environment that encourages creativity and sharing.

- A design tool for dynamic graphics that infers behavior from mockups may allow for natural- feeling creative design with no engineering-related distractions.

- Learning predictors exist and are effective. For them to become widespread, simple abstractions must be invented.

Summary: Less Explicit Interaction

- An information ecosystem of views and translators may be able to offer relevant information of all forms with minimal interaction. Key aspects include topic nomination and translation, confidence levels, learning through feedback, and a fine-grained modular structure wherein small software providers can thrive.

- As technology related to graphics, the environment, and history undergoes revolutionary improvements, interaction will become even more of a critical bottleneck. The best approach is to work towards eliminating it.

- Two centuries ago, Playfair invented statistical graphics and changed the world. The time is ripe for another designer to invent the fundamental context-sensitive graphical forms, and change the world again.