

An abstract graphic featuring a white silhouette of a person's head and shoulders, facing right. The silhouette is filled with numerous small, colorful dots in shades of green, yellow, orange, and blue. The background is a solid yellow color. The entire graphic is enclosed within a dashed white border.

## Self-Portrait

Process Document  
Grad Design Studio I  
Fall 08

An abstract graphic featuring a white silhouette of a person's head and shoulders, facing right. The silhouette is filled with numerous small, colorful dots in shades of green, yellow, orange, and blue. The background is a solid green color. The entire graphic is enclosed within a dashed white border.

## *Anatomy of a HCI Researcher*

Brian Y. Lim, Sep 2008

## Objectives

Project 1 for this course involved doing a self-portrait to introduce myself to the class. We were to use at least two of Wurman's Five Hatracks [1] to structure the information about ourselves.

In this process document, I describe how I decided what I wanted to tell about myself, defined what details to provide, conceptualized how to convey the information, and implemented and refined the design.

The process culminated in a large-scale printed poster which I exhibited in class. After that, I revised parts of the poster, and show it at the end of this document. I shall also describe some of the lessons learned.

## 5 Hatracks

Wurman wrote about how information can be organized into five dimensions, listed here for quick reference.

**L**ocation  
**A**lphabet  
**T**ime  
**C**ategory  
**H**ierarchy

1. Wurman, R. S. Information Anxiety, What to Do When Information Doesn't Tell You What You Need to Know, Bantam Books, New York, 1990, p40-45

## Learning from Others

The first thing I did was to think about what to share in my poster. Since I had never done a self-portrait, I sought experience from examples of years past. I had discussed with Barbara and also found some posters from the online Gallery maintained by the Design department [2].

Of the selection, a few notable and interesting ones were:

**freckles**  
**cultural identity**

**favorite books**  
**significant people**

**cooking**

**countries visited**  
**activities in time (day/week)**

From the posters, I noted many used:

- Many used **graphical domains** of representation (e.g. subway map, cooking) that do not necessarily tie directly with the presented topic of information.
- But some provided an added 'dimension' indicating the artist's interest (e.g. cooking, playing the cello)
- Some portraits aimed to be comprehensive (e.g. timelines of activities)
- While others were more focused and **thematic** (e.g. freckles), telling stories and narratives

I felt that the graphical domains, though entertaining, were not necessary, and were probably detractive. I sought to keep my portrait **abstract**.

I also wanted to keep my content focused on a single **theme**, to be simple and elegant in design.

## What to tell?

After a while of contemplation and a list of ideas, I narrowed down to three topics and stories:

**Favorite foods:** This could be interesting, but it may be difficult to find names of the dishes, and Americans may not understand them, as many dishes would be **Singaporean**. But it would celebrate my background, and show that I have an **eclectic** palate encompassing cuisines from several cultures.

**Languages:** This would be about my **weakness** and lengthy struggle with **Chinese**, and the growth of **interest** in **programming** languages. But talking about programming stuff may be geeky, and I may not have much to say about Chinese.

**How I got into HCI:** This would describe my path from **Physics** and a little interest in **Art** to **Computer Science** and **Human-Computer Interaction** (HCI).

## Path to HCI

The development of my academic life to HCI has been something I cherished as unique (at least to people I knew back then), and this would give me an opportunity to study carefully what had influenced me and how.

I had also discussed with a colleague (fellow Ph.D. student) and she was interested to learn how I came to where I am from where I came from (Physics).

Therefore, I decided to pursue this story, and shall describe my detailing and information structuring procedure in the next section.

## Fleshing out the Content

I considered my academic interests in terms of subjects. There were three in particular that have been integral in my life, with a fourth incipient one.

**Physics**  
**Computing**  
**Art / Design**  
**Human Factors**

These four subjects would be the backbone(s) of my story, representing how my interest and dedication to each subject changed through my life, triggered by events and decisions.

## Applying LATCH

When applying Wurman's LATCH framework, to structure events in this story, I realize that only a few dimensions are appropriate

**Time:** The most natural dimension to **order** events (chronologically). This could also be used to indicate **duration** of events. Since I think of my life in terms of phases instead of years, I decided to order my life in stages:

Secondary School (Grade 7-10)  
Junior College (Grade 11-12)  
Military Service (2 years)  
College (3 years)  
Research Stint (1 year)  
Graduate School

**Category:** Obviously the aforementioned subjects are arranged categorically.

**Hierarchy:** The subjects are represented in terms of their importance and influence, so this is hierarchical too.

## What to present?

With the story, story elements, and LATCH dimensions settled, the information to be presented can be summarized as follows. The main elements are **subjects** represented as **tracks** that vary in their thickness depending on their influence or importance at that point in my life.

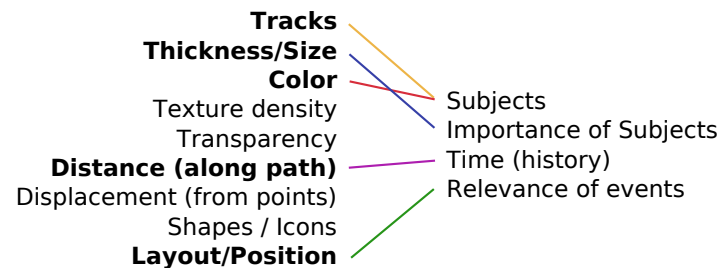
Secondary School	Junior College	Army	College	Research Stint	Grad School
Design	Design	Design	Design	Design	Design
Physics	Physics	Physics	Physics	Physics	Physics
Computing	Computing	Computing	Computing	Computing	Computing
					Human Factors

Table to sketch information of where tracks should be emphasized

These tracks would be triggered by various **events** and **decisions** in my life, represented by **nodal points** scattered about the tracks.

## What to draw?

I had yet to do any graphical sketches or doodles, and now that the information and dimensions were settled, it was time to investigate which graphical elements to employ. Here is a list I considered with bolded ones eventually selected, mapped to information elements.



## First Review

At this point, we presented our portrait ideas to the class with the sketch (facing page) done in PowerPoint. My basic concept was four paths with different colors representing each subject. Note one that only starts mid-way. The thicknesses would vary depending on importance or influence at that time. Events and decisions would be scattered about the time-subject space. The paths would eventually converge to where I joined the Human-Computer Interaction Institute (HCII) to pursue my Ph.D.

The idea seemed generally well received and understood. I did not receive much feedback to work on.

## Some Contentions

However, I still had some contentions to deal with, such as the following:

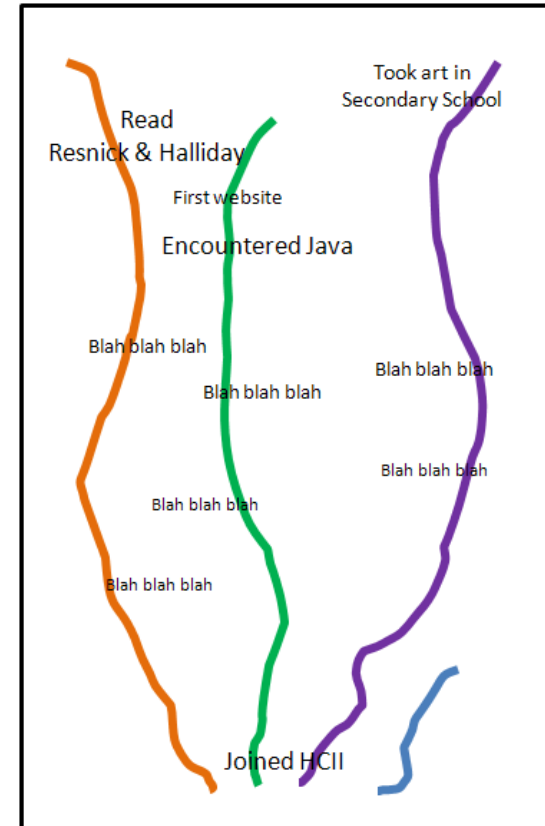
**Horizontal vs. Vertical?** How to orient the timeline. Horizontal would be too "ordinary," so I stuck with vertical.

**Upwards vs. Downwards?** Rising like a tree or falling like a waterfall due to gravity? I decided to pursue the latter indicating that my paths are governed by forces outside my control.

**Control/Neat vs. Fluid/Organic?** Many past posters tended to use neat lines and shapes. My ideas tended to flow more organically as I placed my events or influences depending purely on when they affected me, disregarding controlled order. Fluid, organic shapes would be able to convey this surrendipity.

**Events vs. Decisions?** It is easy to place events, but how can I represent decisions? Through a branching metaphor? How would that fit in this idea of paths? I eventually decided to classify decisions as events — important ones.

**Domain vs. Abstract?** I was wondering why so many past students used a specific domain. I did not find any that naturally mapped to mine, so I wanted to pursue the abstract.



## Some Explanations

This quick sketch indicated some ideas for the final poster:

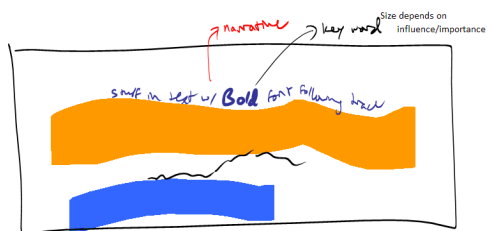
Physics feels **orange-yellow**, Computing feels **green** (color of motherboards), Art / Design feels **violet** (because that was my favorite color), Human Factors feels **blue**.

Paths **converge** to a destination.

Words have a "**reverse-perspective**" effect where the words on the top are larger because earlier events do have more influence.

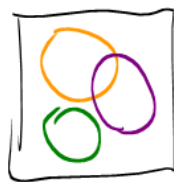
# Exploratory Sketches

With the general layout settled, I proceeded to explore through sketches how to execute the design. All sketches were done on my Tablet PC.

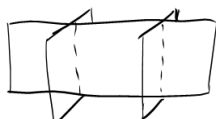
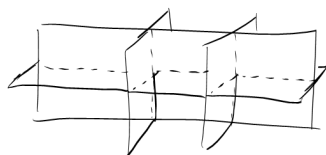


- Narratives as threads to secure discipline 'paths'/ropes, OR
- Narratives are what constitutes the volume of the threads?

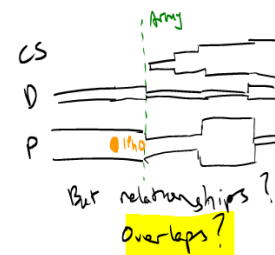
During a discussion with Barbara as she was pushing for a **proximity** or even **overlap** relation between my paths, I described the notion that the paths were actually "**tubes**" that relate to one another in a **3D** space. Taking slices along their axes, could show us something like a Venn diagram.



But how to represent this? 3D to 2D projection? That would be hard to draw. Barbara suggested making the poster into a 3D entity.



I struggled with the notion to overlap the tubes. How can that be represented on a flat poster?



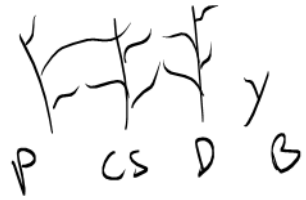
Eventually, I questioned why an overlap relation was needed. Any "overlap" could be represented by the contribution of the paths due to the specific events (e.g. that a Physics website involves elements of Physics, Computing, and Design).

I also explored the idea of a transient desire. For example, since I stopped taking art classes in Secondary School, I had always wanted to eventually come back to it. That is my transient desire, which I do occasionally fulfill.



## Flow of Events to Paths

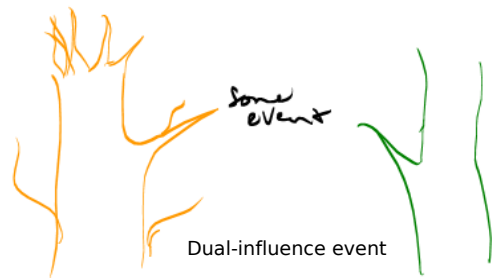
Execution of ideas through and implementation of sketches.  
Explorations of how to draw events "flowing" onto the paths.



Rough layout



Multi-source tributary



Dual-influence event



Shaping exercise



Radial gradient



Translucent overlap



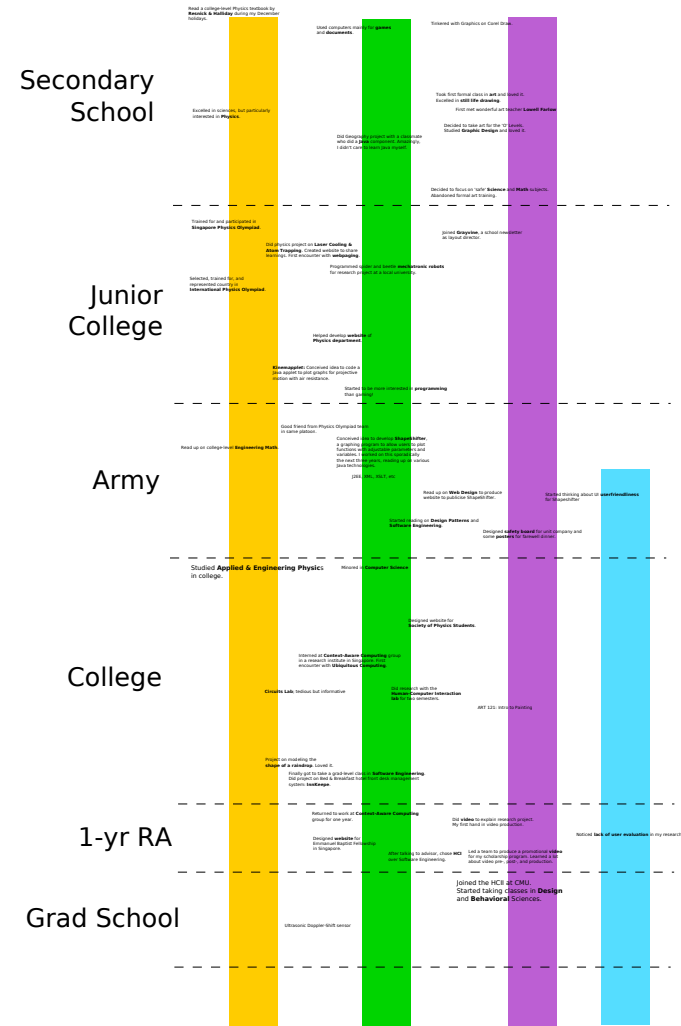
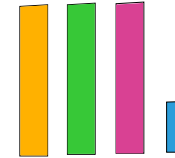
Feathered edge



Feathered + overlap

## Execution: Layout

I took a top down "whittling" approach to implement the design. Starting with four bars to represent the paths, I zoned out regions representing periods in my life. Then I positioned the events starting with major ones.



Then I started working on the "tributaries," starting from big events, then to the smaller ones. **Please turn over...**

# Exhibition

Secondary School  
(Grade 7-10)

Junior College  
(Grade 11-12)

Military Service

College

Research Stint

Grad School

Future

● Physics  
● Computer Science  
● Design / Art  
● Human Factors

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## Critique

Except for the audience understanding that I've done a lot of learning during my military service, I feel the reception was relatively poor.

Some viewers did not understand some **technical terms** (e.g. Matlab).

Many viewers were **confused** that reading should **start from the bottom**, since gradient **fade** which should have been for goals are on top, bottom is **flat** like a tree trunk, and extensions look like **thorns**. I was recommended that I could have made the bottom drip instead of cutting it off flat. This would have supported the gravity analogy.

Some viewers found the **time scaling** to be **ambiguous** as it was not strictly scaled to years. I had wanted to scale it to my impression of how fruitful I found that period. Barbara pointed out that this was **subjective** and reduced the clarity of communicating time.

**Lack of narrative** left viewers lost as design was **too abstract**.

## Lessons Learned

Even though I had tested my design with some people, I realize that they were already too familiar with my abstract concept and what it stood for. The class did not understand or remember that, and a **supporting narrative** (commonly used) could have been a suitable **introduction**. On other posters, there was a significant appreciation for **verbiage** used, which points out to me the importance of **textual elaboration** to engage the viewer even for a graphical medium. Overall, I learned that there will always be a tension between **clear communication** that follows norms, and the flexibility that comes with artistic freedom.

In terms of what the self-portrait reveals: it can be sad how clearly my involvement in Physics that I have trained so hard in has been reduced to such a low significance.

## Revision

To make my design a little clearer while preserving some artistic integrity, I made some revisions. Inspired by my fascination with abstract art (e.g. Jackson Pollock), I likened my graphical elements to that of paint **splashing** and **dripping** on a canvas.

**Please turn over** for the final revision.





## Secondary School (Grade 7-10)

Excelled in sciences, but particularly interested in **Physics**.

Read a college-level Physics textbook by **Resnick & Halliday** during my December holidays.

Used computers mostly for **games and documents**.

Took first formal class in **art** and loved it. Excelled in **still life drawing**.

First met wonderful art teacher **Lowell Farrow**.

Decided to take art for the 'O' levels. Studied **Graphic Design** and loved it.

Did Geography project with a classmate who did a **3D presentation**. Amazingly, I didn't care to learn how myself.

Designed spider and beetle **mechatronic robots** for robot competition at a local university.

Joined **Grayline**, a school newsletter as layout designer.

## Junior College (Grade 11-12)

Decided to focus on 'safe' **Science and Math** subjects. Abandoned formal **art** training.

Did physics project on **Laser Cooling & Atom Trapping**. Created website to share learnings. First encounter with **webpage**.

Trained for and participated in **Singapore Physics Olympiad**.

Learned **JavaScript**.

Learned **Java**.

Selected, trained for, and represented country in **International Physics Olympiad**.

Helped develop website of **Physics department**.

Keenestudent: Convinced three friends to give up their **mathematical reasoning** at entrance.

Learned **C++**.

## Military Service

Great friend from Physics Olympiad team in **Singapore**.

Conceived idea to develop **Shapeshifter** as a more versatile graphics program. I worked on his **geometric** for the next three years, reading up on various software concepts.

Read up on college-level **Engineering Math**.

Read up on **web design** to produce website for **Shapeshifter**.

Started thinking about **UI effectiveness** for Shapeshifter.

Started reading on **Design Patterns and Software Engineering**.

Decided **senior board** for unit company and some **senior board** member.

## College

Studied **Applied & Engineering Physics** in college and minored in **Computer Science**.

Learned **OpenGL**.

Started reading on **Design Patterns and Software Engineering**.

Interned at **Computerware Consulting** group in a research setting in Singapore. First encounter with **Software Engineering**.

Did research on the **Human-Computer Interaction** lab for **senior project**.

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## Research Stint

After talking to advisor, chose **HCI** over **Software Engineering**.

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## Grad School

Joined the **HCI** at CMU

Research on **Intelligibility**

Ultrasonic **Doppler Shift** sensor

## Future

- Physics
- Computer Science
- Design / Art
- Human Factors

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Brian Y. Lim, Sep 2008