

Development of the Cubular Web User Interface

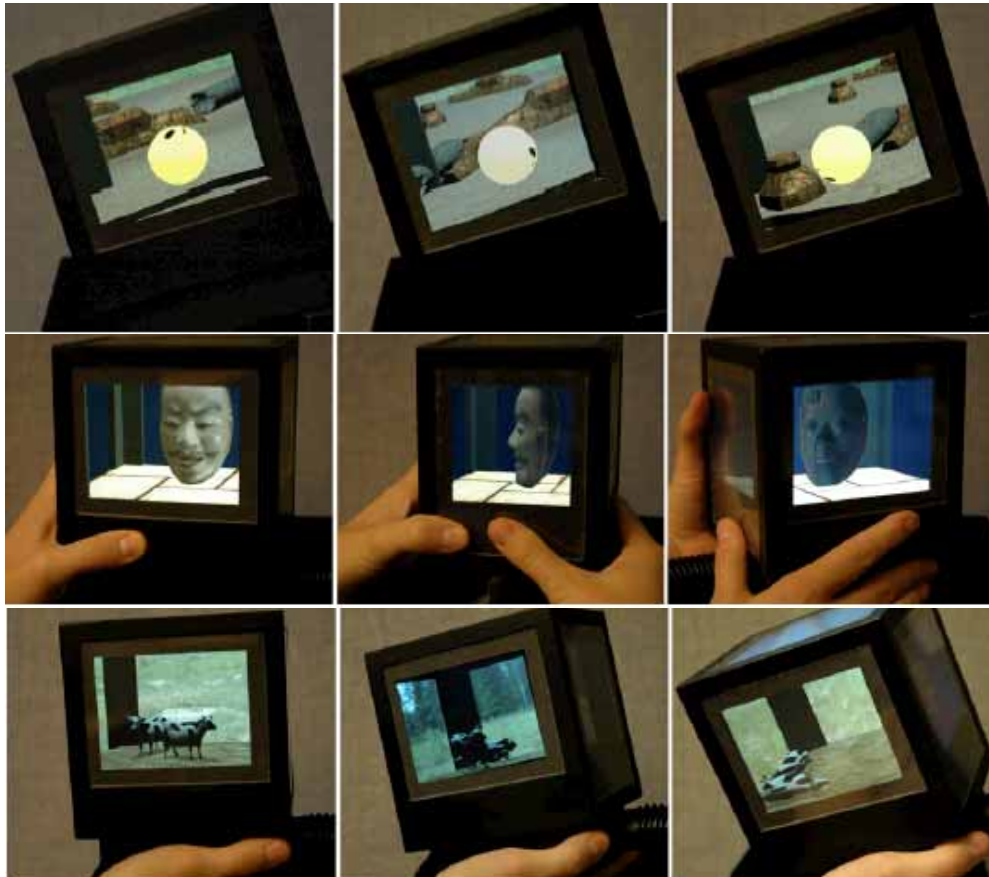
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+ Activity Summary

- Receiving institute : Media and Graphics Interdisciplinary Centre (MAGIC), University of British Columbia
- Active period : Feb. 1 ~ Mar. 29, 2010 (59 days)
- Purpose : To share information about “Cube”
 1. Development of a Web system to remote-control for images of Cubee.
 2. Improvement of the KACHINA CUBE with the help of the comments by MAGIC members.

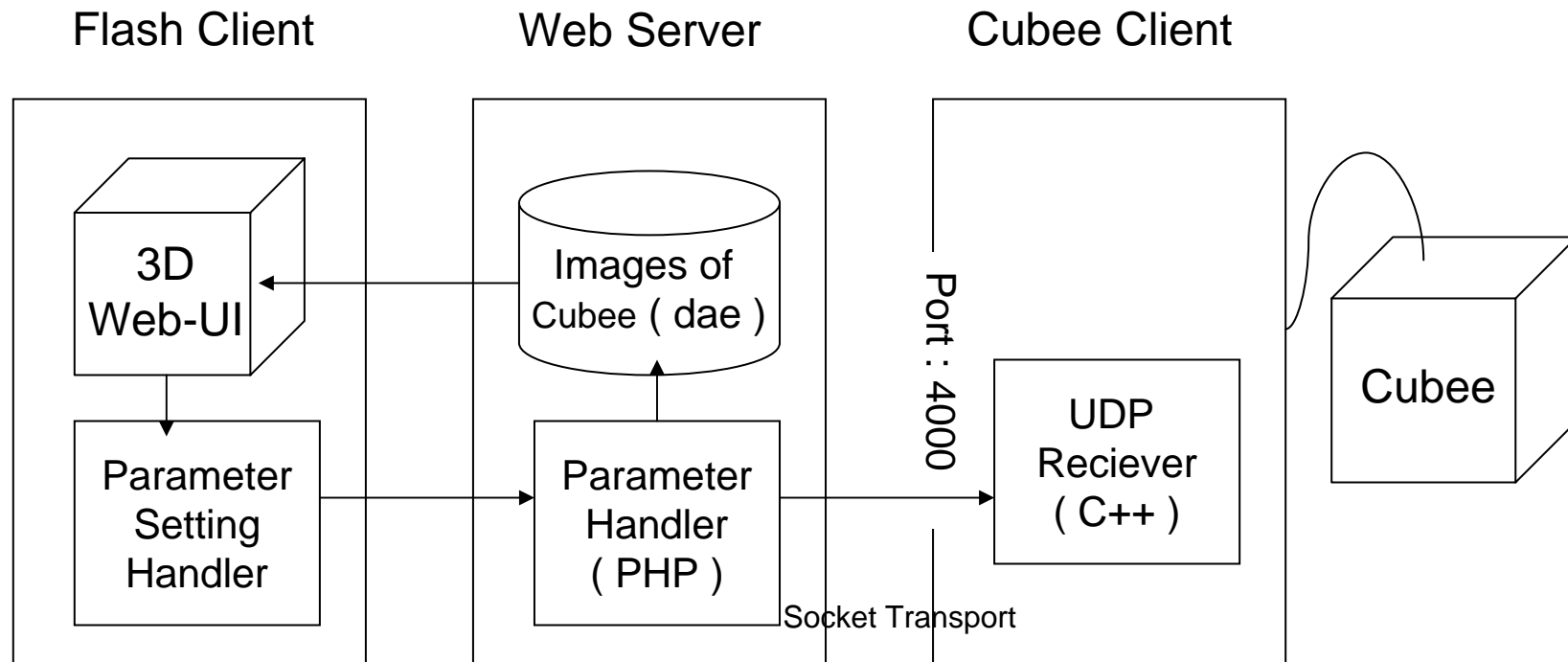
+ 1. Development of Web System to Remote-control for Cubee/pCubee



- Cubee is the original prototype of "reactive" cubic head-coupled 3D display made by MAGIC
- My part in the development:
 - Web System to remote-control for Cubee

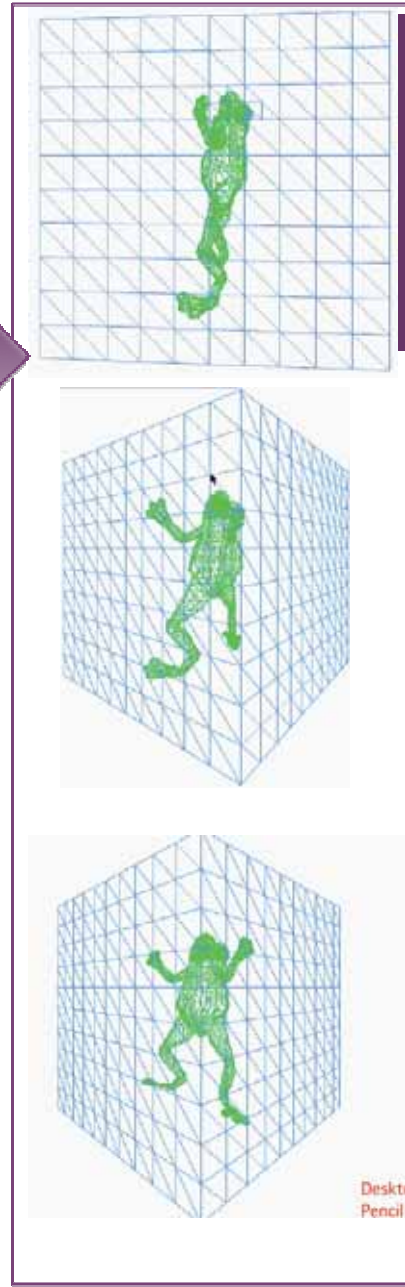
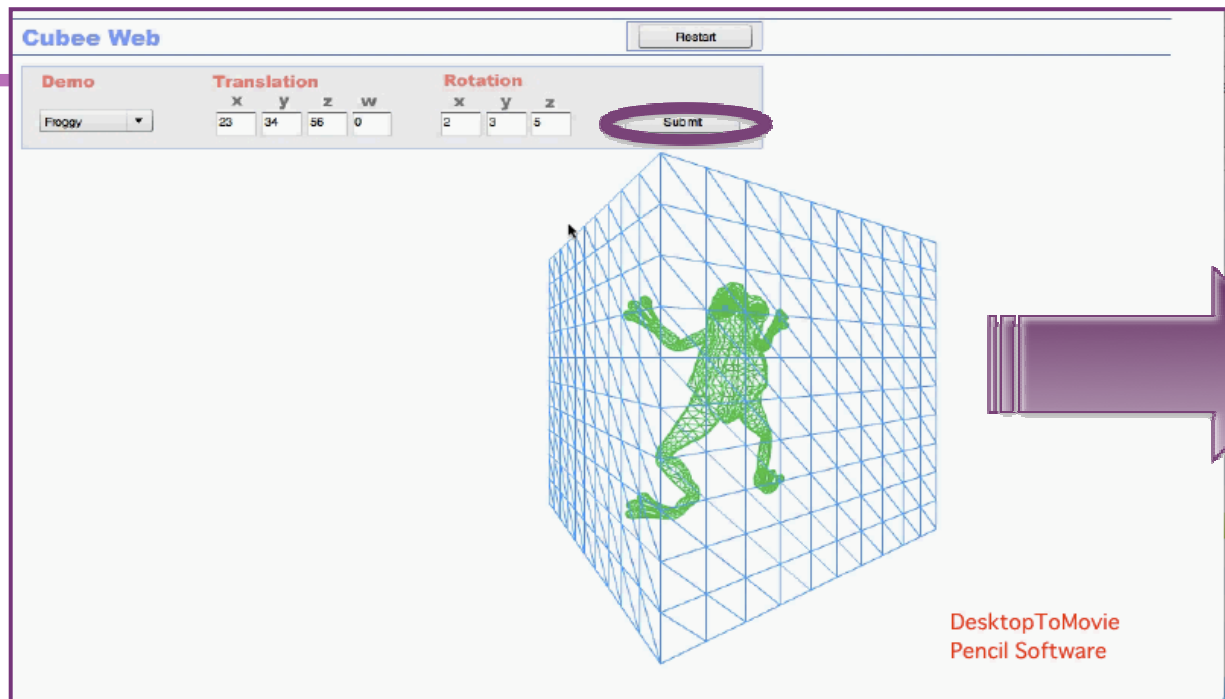
<http://hct.ece.ubc.ca/research/cubee/>

+ System configuration diagram



+ Implementation

1. Image translation (blender)
2. Design of 3D Web UI (Flash + Papervision3D)
3. Parameter Handler (PHP: Hypertext Preprocessor)
4. UDP Receiver (C++)



```
ターミナル — udp — 69x28
em114-51-84-178:Desktop saitos$ ./udp
UDPServer Waiting for client on port 4000

ターミナル — udp — 69x28
em114-51-84-178:Desktop saitos$ ./udp
UDPServer Waiting for client on port 4000
(127.0.0.1 , 57574) said : item->3/tranX->23/tranY->34/tranZ->56/tran
W->0/rotX->2/rotY->3/rotZ
```

+ Result

- Attainment
 - Completion of the basic parts of client-server image operation system
- Outstanding problems
 - Reducing the load on operation of 3D objects on the Web browser
 - Actual operation of images of Cubee over the Internet

+ 2 . Improvement of the KACHINA CUBE

- KACHINA CUBE(KC) is a 3D visualization tool for Web database.
- KC can store information called “fragment”, and each “fragment” is plotted in the 3D space.
- KC has a function that can draw lines among between related fragments, to visualize relationship.

+ Overview of the KACHINA CUBE

Account: test

View Mode 東→西

検

New

Time-line

Old

1904年6月1日

Finish Browsing

BROWSE EDIT NARRATIVE HELP

U B E

title
バラック前の捕虜

name
matsuyama

ID age
6 1905年

comment
捕虜、看護婦、取容所職員が写る。捕虜の白は日本赤十字が提供したもので、赤十字のマークが見える。中列中央やや左の捕虜の白衣の左肩には雪輪のマークが見えるが、これは将校であることを示している。後ろのバラックの壁が下見板張であるので、1号病室から11号病室のいずれかである。写真の型紙には「伊豫松山二番町 宇野和吉」とある。

Open Note Delete

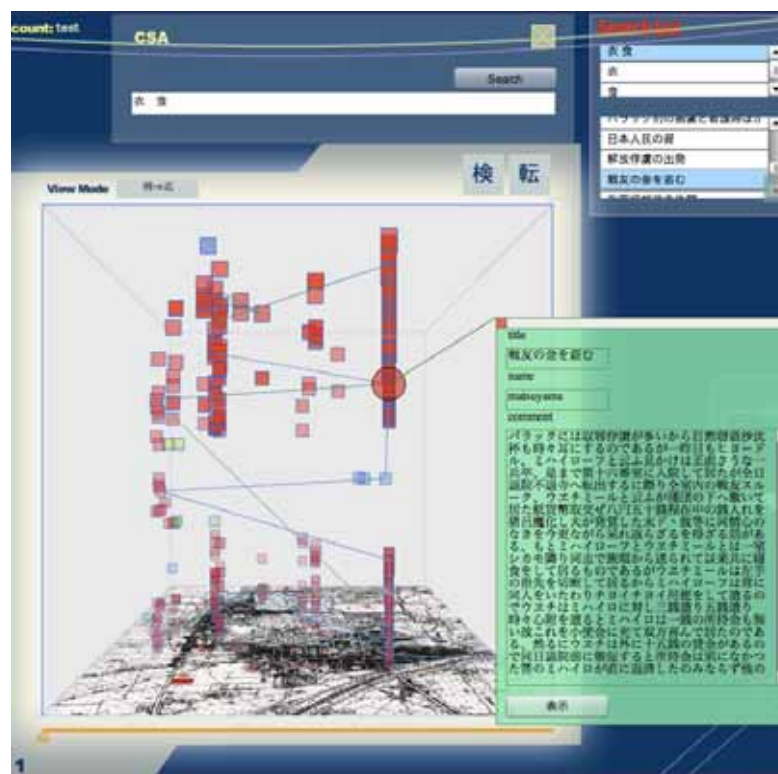
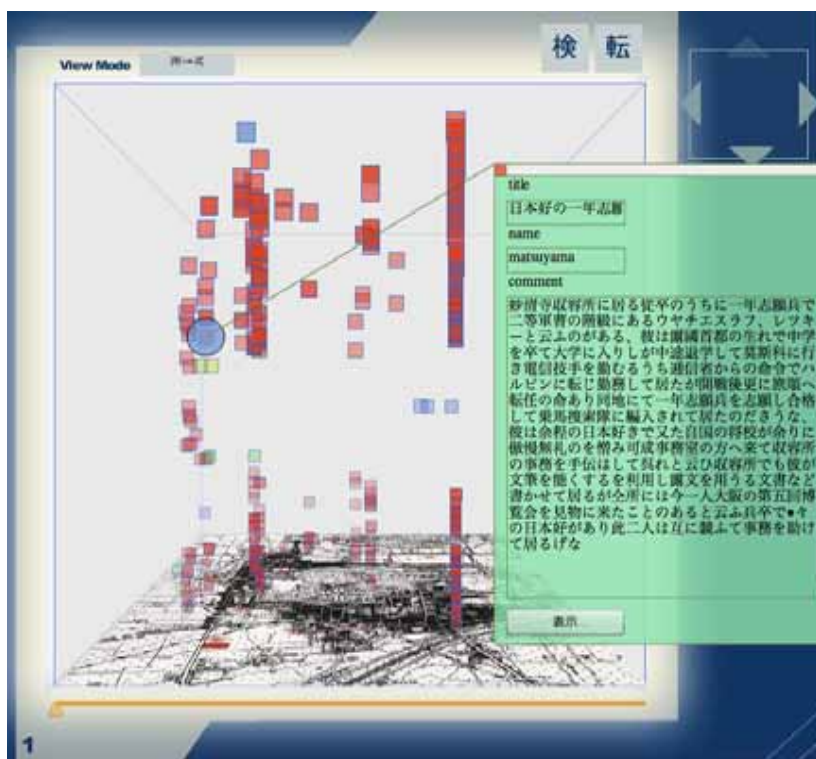
title
捕虜と監督将校

name
matsuyama

ID age
5 1905年

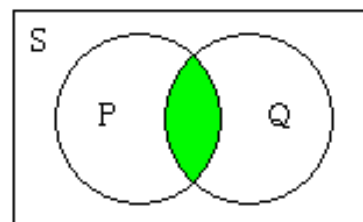
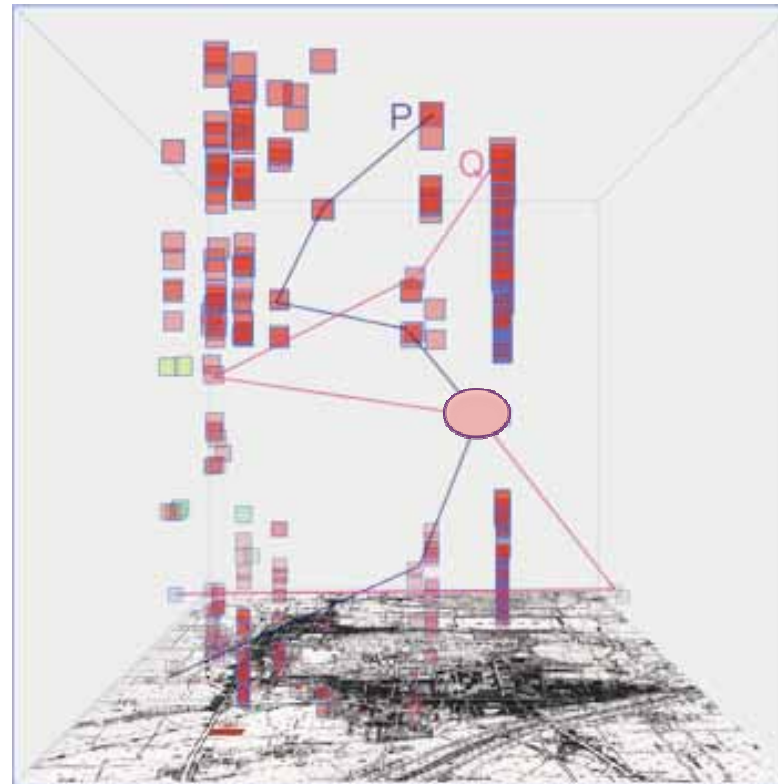
comment
公会堂収容所（1904年5月開所、現在の松山市三番町7丁目）の庭にて、右から上等兵大西、軍曹河野義行、上等兵森本止善、一等卒谷義敬、露国少尉ラフイスキー、軍曹井村五郎八、露国兵卒、上等兵児島亀太郎。捕虜将校と監督将校と一緒に写っている写真が少なくないが、捕虜兵と日本兵と一緒に写っている写真は珍しい。

+ Visual search function of KC

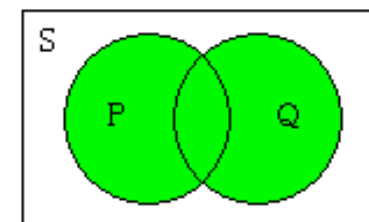


+ Logical Connective

- Logical conjunction
 - a two-place logical connective that has the value true if both of its operands are true, otherwise a value of false.
- Logical disjunction
 - a logical operator that results in true whenever one or more of its operands are true. "A or B" is true if A is true, or if B is true, or if both A and B are true.



Logical conjunction



Logical disjunction

+ Conclusions

- Information-sharing for the effective utilizations of cubular digital tools.
- Completion of the basic parts of client-server image operation system for Cubee.
- Improvement of the KC system by incorporating the opinion of MAGIC researchers.