Designing User-centric TV Production Control Rooms:
from Eye-gaze to Understanding Decision-making

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Abstract

Decision-making is crucial for smooth live TV program broadcast. Continuous attention and input control on multiple screens under TV Production Control Room (PCR) is physically and cognitively demanding. Viz Mosart studio automation system by Vizrt has successfully simplified operation of TV production, although TV production producers are still required to manage multiple tasks in parallel and PCR setups are not designed as producer-friendly.

This project investigates the relation between PCR monitor layout and operation cognitve load through analyzing producers' gaze pattern. We aim to apply insights to present future user-centric PCR setup.

Gaze study

We collected 9 producers gaze data during live TV program operation (morning show, news, and panel program). Mainly we collected two types of device data: eye-tracker (gaze direction, voice audio), scene video (closely observed device control).

From initial data screening, we found that producers focused on specific parts of monitors (e.g., production automation system, program view, timer, prompter, studio cameras, and external input).

Currently we're working on data analysis. Stay tuned for more results!

Research questions

RQ1. Which area of PCR monitors or what kind of information is more important to the operation and more closely related to decision-making?

RQ2. Do specific eye movement patterns (e.g., fixation duration, saccades amplitude) reflect operational difficulty of particular decision-making moments?

RQ3. Does the gaze pattern reflect proficiency of operation or type of TV program?

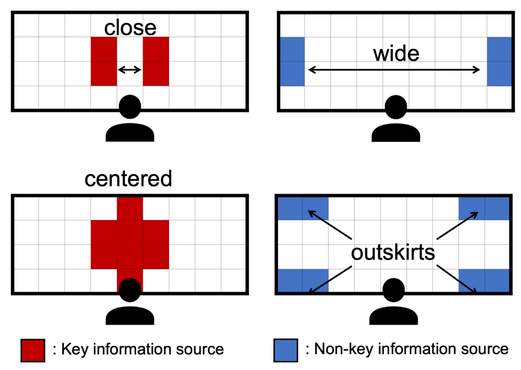
Value proposition

The obtained insights from the gaze study will be reflected for:

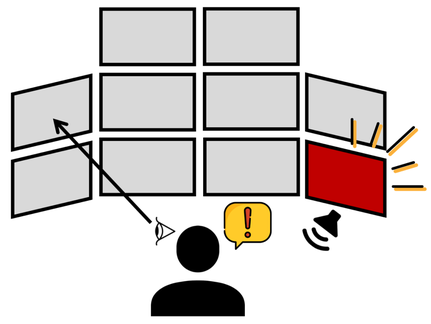
1. Hardware approach by improving PCR setup:
   Developing monitor layout reconfiguration guideline or gaze nudging technology for TV PCR workers (for TV 2).

2. Software approach by improving studio automation system:
   Providing producer user experience reports for further Mosart system upgrade (for Vizrt).

1. Monitor Layout Guideline



2. Gaze Nudging for Novice



First prototype: VR simulation
Second step: Realtime nudging with AR glass

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