

Closing Remarks

Field Based Design: An *Interdisciplinary* Endeavour

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1. **FB Perception Design:**

- Life view design and activity/experience predictability: Personal/group activity recognition and understanding (and transferability), as in lifelog and grouplog (Prof. Nakamura)
- Human interaction analysis, as in digital trace analysis (Prof. KW Cheung)

2. **FB Representation/Processing Design:**

- Categorical/numerical attribute-based clustering metrics design and performance evaluation (Prof. YM Cheung)
- Multi-level network structures (and dynamics) (Prof. KW Cheung)
- Sampled-data control system based algorithm (Prof. Yamamoto)
- Exploring semantic concepts and relationships for image retrieval (Prof. Leung)

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3. **FB Communication Design:**

- Interoperability standards and accessibility design for multi-level clinical data exchange and access, as in iDolphin/Maiko Net (Prof. Yoshihara)
- User/context-awareness and communication design: Multi-feature, individualized recommendation, as for web experience and healthcare (Prof. Chen)

4. **FB System Design (“Field as a System – FaaS”):**

- “Virtual sensing” to predict and control quality, as in process industry – modeling based on operational data (Prof. Kano)
- Multi-factor aware situational analysis, based on multi-scale data-driven systems modeling, as in public health and epidemiology (Prof. Liu)

FB Research Issues

1. Multi-modal data acquisition, fusion, representation, and semantics (e.g., in sensory data, words, images, and scenes/videos);
2. Multi-attribute/sparse data mining; data-driven modeling;
3. Resource availability and reliability;
4. Discovering (from “big data”) the most informative subset and hidden patterns;
5. Multi-scale, multi-level, and just-in-time systems modeling and control;
6. Field based design methods: “Data + First Principles”;
7. Cross-nation/setting scalability.