



Comper Vision and Media Lab (CVM)

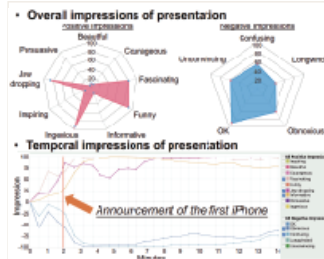
Our research interests have a wide spectrum: multimedia, computer vision, pattern recognition, machine learning, natural language processing, and computer graphics. We are interested not only in fundamental problems but also business-level applications using our technologies. We have a lot of collaboration projects with international industry and academia.



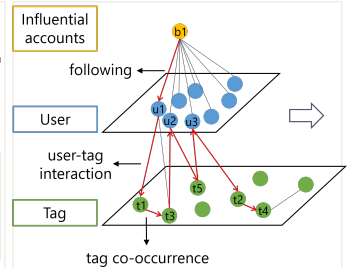
Attractiveness Computing

We are interested in analyzing why and how we get attracted to specific persons, contents, and services. We have been trying to predict, tell reasons, and even enhance such "attractiveness" or "sympathy" using multimedia big data. We are not doing research on application oriented topics, but trying to solve the research problems behind them.

- Analysis of presentation, lectures, interviews, etc.
- Effects prediction of ads and product design
- Social popularity analysis and enhancement in SNSs
- Analysis and recommendation of influencers
- Consumer behavior analysis and marketing
- Matching and recommendation
- Photo retouching (art design, Instagrammability, etc.)
- Property tech (PropTech) using AI and IoT
- Photo/video quality assessment and enhancement
- Video summarization and mash-ups
- AI-assisted education



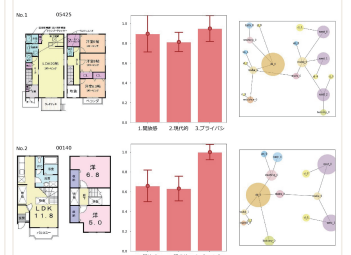
Presentation Analysis



Graph Analysis for SNSs



Fashion Retrieval and Recomm.



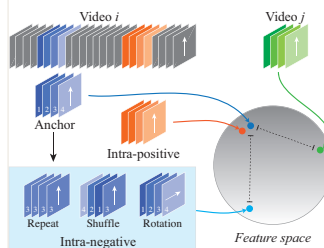
PropTechs using ML



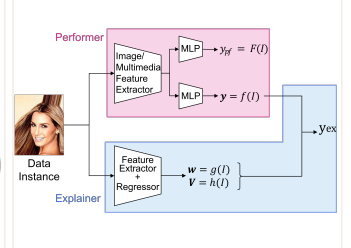
Machine Learning Frontiers

We have been working on fundamental machine learning problems. We are interested in developing novel research problems or fields rather than extending existing algorithms.

- Learning with few/imperfect training data
- Recognizing/Understanding/Summarizing videos
- Self-supervised learning and contrastive learning
- Attack and defence using adversarial attacks
- DeepFake detection and classification
- Content generation using GANs and style transfer
- Explainable AI
- Situation-dependent sentiment analysis for NLP
- Sentiment analysis of images/videos
- Reliability enhancement of ML algorithms
- Reinforcement learning for image/video processing
- Transfer learning and transferability



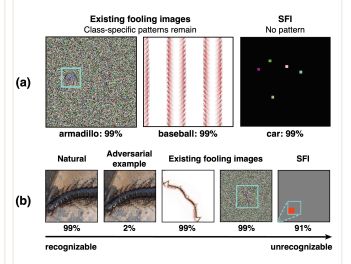
Contrastive Learning



Explainable AI



Deep Fake Detection



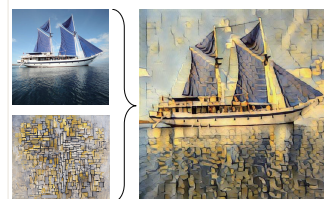
Sparse Foiling Images



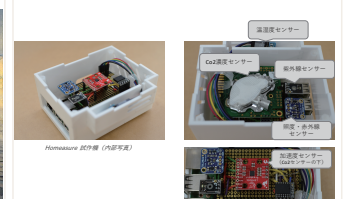
Other Challenging Problems

We are also challenging new research topics aiming at widening our research activities.

- Nursery school and elderly care house sensing
- Environment sensing using our own IoT devices
- Medical image analysis
- Medical applications using SNSs and online chat



Style Transfer using ViT



IoT sensor for Env. Sensing