Application software and robot device

Terbinari operating program represents interactive training and conversation model, natural language processing, understanding and generation syntactic and semantic analysis/matching logic algorithms, and controller operating methods.

Artificial conversational entity performs input/output question-answering, learning, spoken dialog system with multi-function chat-bot interface and anthropomorphic humanoid robot Control Bot Mechanism animatronics operator. The cervical motility device implements mouth speech events motion and eyes/head tracking contact and response under facial detection/recognition process of computer vision.

The bot operates individual unique memory content updated by interlocutor input in frames of the system legal code. The answer defines output for dialogue as a tool of reflective analysis by returning efferent recall from human-like machine cognitive function. Embodies autonomous companion simulator as trainable virtual teaching assistant and agent of compensatory intercourse for various interactive communication tasks.

Research and technology development

"Toy Artificial Intelligence" laboratory is founded as a non-profit scientific and engineering organization. Operates on an independent creative platform of experimental research in the fields of intelligent systems and mechanics, involves such areas as computational logic, cognitive science, mechanical design/engineering, and industrial/artistic design.

Implementation startup was started in 2016 with a multidisciplinary engineering approach, based on computing techniques in computational linguistics, automatic natural language processing, understanding and generation, the machine and robot learning, computer vision, and mechatronics concepts of inventor Lado Oniani.

The development aims to create and investigate synthetic entity architecture and behavior, information processing algorithms, and operation control methods to design building blocks of learning/dialogue contextual association system, integrated with anthropomorphic humanoid and bio-inspired robotics architecture.

Invent custom assistive educational, therapeutic, social and humanitarian, interactive and robotic solution prototype, adaptable for specialized use with modeling and simulation conversational setup via a human-machine interface, behavior observation, study, development, optimization, and accumulation potentially derivative experiment.

Prototype application compatibility and usage

Particular Terbinari software implementation developed on Microsoft Windows OS platform with using of system speech synthesis/recognition references and external CV library output.

Project

- Terbinari: operating program training and conversation model, semantic processing algorithms, controller operating methods
- CBM: Humanoid robot device (Control Bot Mechanism)
- Tet: artificial conversational entity prototype application software interface and control

Operating program interface interacts with training and conversation slot, represents dialog processing models in text-to-text, text-to-voice, or voice-to-voice modes and robot control methods. Mechanical response provides tracking orientation and eye contact with user/interlocutor, as well as mouth device synchronization with speech motility events.

Lado Oniani

- Logic and technical concept
- Algorithms and methods
- Architecture
- Engineering
- Programming
- Content
- Mechanics (design and development)
- Manufacturing (modeling and 3D printing)
- Electronic devices/components assembly solution