

Chance Discovery with Emergence of Future Scenarios

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Abstract

A "chance" is an event or a situation significant for making a decision in a complex environment. Since we organized a session of Chance Discovery in KES 2000, the basic theories attracted the interdisciplinary community of researchers from philosophy, sociology, artificial intelligence, finance, complex systems, medical science, etc. Even stronger reactions from companies lead to organizing the Chance Discovery Consortium in Japan, achieving big fruits of business.

In this talk, the methods of chance discovery are presented. In summary, visual data mining methods developed for chance discovery aid user's individual thoughts and users' group discussions about scenarios in the future. This process is called *Double Helix*, where humans and computers cooperatively make spiral deepening of their concerns with chances. In this process, valuable scenarios emerge with users' awareness of chances, like creatures emerging with the chromosome - crossing at crossover points. Emerging scenarios motivate the user to work in the real world to try actions, and the new data acquired from the real world accelerates the process.

Chance discovery, in other words, is the child, and is also the parent of scenario emergence. Participants of KES'2004, interested in human-human, human-environment, and human - machine interactions, will find how all these kinds of interactions are integrated to make real benefits.

References

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3. Ohsawa Y, Fukuda H (2002) *Chance Discovery by Stimulated Group of People - An Application to Understanding Rare Consumption of Food*. *J of*

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4. Ohsawa Y (2002) Chance Discoveries for Making Decisions in Complex Real World. J New Generation Computing 20 (2):143-163

Biography

Bachelor of Engineering (1990)

Dept. Electronic Engineering, Faculty of Engineering, University of Tokyo. Thesis: Morpheme Analysis of Natural Language Sentences Including Unknown Words . Supervisor: Prof. Hiroya Fujisaki.

Master of Engineering (1992)

Graduate School of Engineering, University of Tokyo: Discovery of a New Stationary Solution of Femto-Second Optical Pulse Propagation in Optical Fiber. The solution is named Super Soliton. Supervisor: Prof. Yoichi Fujii.

Doctor of Engineering (1995)

High-speed abduction. The method - Networked Bubble Propagation - achieves a polynomial-time approximate computing for abduction, though it is NP-complete.

Research Associate (1995-1999)

Osaka University

Current positions

In University of Tsukuba(1999-) - Graduate School of Business Sciences

Researcher - Japan Science and Technology Corp. (2000-)

Visiting Researcher - AIR Intelligent Robotics Labo (2003-)

Member of DISCUS Project, Illinois University (2003-) .