

Dialogue systems

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Objectives and Content

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- Objectives – introduction into the area of a dialogue communication and dialogue systems.
- Content of the course:
 - A dialogue systems introduction, history
 - Used technologies:
 - a digital sound/signal processing
 - a speech recognition
 - a semantic interpretation of the recognized speech
 - a speech synthesis
 - a voice transfer over a computer network (Voice over IP)

Course objectives and content

Cont.

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- Dialogue systems:
 - Dialogue modelling
 - Dialogue analysis, cooperative and non-cooperative dialogue
 - Dialogue strategies
 - Information retrieval DS
 - Question answering systems
 - Chatbots
 - Tool kits for creating chatbots
 - A dialogue system simulation
 - Multimodal communication
 - Tool kits for creating dialogue systems – W3C Voice Browser Activity standards, AIML, W3C MMI Standards
 - Applications.

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- Possible conclusions:
 - Exam
 - Colloquium
 - Credit
- Requirements:
 - Intrasemesteral iterative design and development of a simple dialogue interface using practical homeworks – up to 10 points.
 - Exam and colloquium – a good orientation in the area of dialogue systems and communication.
 - Exam – written and oral examination - up to 40 points (10 points per question)
 - Colloquium – design of the dialogue interface and in more detail discussion of some of the used technologies.
 - Credits – written assignment (40 points).

Course Evaluations

Required points

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- Credit > 15 points
- Exam:
 - A > 45 points
 - B > 40 points
 - C > 35 points
 - D > 30 points
 - E > 25 points
 - F ≤ 25 points

Recommended bibliography

Books

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Bibliography

- J. Psutka, Komunikace s počítačem mluvenou řečí, Academia, Praha, 1995
- Z. Kotek, V. Mařík, Metody rozpoznávání a jejich aplikace, Academia, Praha, 1993
- T. Dutoit, An Introduction to Text-to-Speech Synthesis, Kluwer Academic Publishing, 1996
- A. Kobsa, W. Wahlster, User Models in Dialog System, Springer 1989
- D. B. Roe, J. G. Wilpon (editors), Voice Communication Between Humans and Machines, National Academy Press, Washington D.C., 1994
- F. Jelinek, Statistical Methods for Speech Recognition, MIT Press 1997
- K. Jokinen, M. McTear, Spoken Dialogue Systems, Morgan & Claypool Publishers 2010

Recommended Bibliography

Web

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Bibliography

- Nuance Dragon
- Links to the dialogue systems – Dialogue systems links
- Stanford University CSLI home page
- W3C Voice Browser Activity
- W3C Multimodal Interaction WG
- Pandorabots documentation (AIML)
- ...