# CLIPS Presentation

CLIPS-IMAG laboratory
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## Emerging themes

The CLIPS laboratory is an academic institution linked to CNRS (Centre National de la Recherche Scientifique) and University Joseph Fourier at Grenoble (France). CLIPS deals with themes related to human-computer interfaces, interactive systems, multimedia systems, virtual realities. The research focuses are :

- **The "Natural Languages, Translation and Dialogs" axis** : **natural languages** as topic, and also as a communication vector for human-computer dialog or automatic translation
  - Computer-based tools for the Automatic Processing of Natural Languages (C. Boitet)
  - Speech and Dialog (J. Caelen)
- **The "Interaction Systems" axis** : **interaction systems** (multimodal interfaces, virtual realities, tele-presence, etc.) for specific contexts: (artistic creation, computer-aided design, etc.)
  - Multi-sensorial interaction and representations (J. Coutaz, J. Caelen)
  - Engineering for human-computer interaction (J. Coutaz)
- **The "Multimedia Systems" axis** : **multimedia systems** (knowledge-based systems, information retrieval systems using natural languages, hypermedia systems, etc.) providing models and basic tools
  - Multimedia information retrieval (M.F. Bruandet)
  - Hypermedia application design environments (J.P. Peyrin)

The research themes require academic research as well as understanding usages and needs (design, evaluation, software pre-development, etc.): thus the laboratory integrates an usability lab (MultiCom), which is open to the socio-economic world.

## European Project References

CATS, IT IV, RTD project, Review report, CNR, 1996, Final Report CNR, 1998. (**C**omputer **A**ided **T**heatrical **S**core: design special tools for speech processing in the theatrical area)

SAM & SAM-A, Esprit I, II & III, BRA projects #1541 & 2589 & 6819, Final Reports, Multilingual Speech Input/Output Assessment, Methodology and Standardization, UCL, 1989, 1991, 1993. (**S**peech **A**ssessment **M**ethodology : automatic annotation of large speech corpora)

AMODEUS II, Esprit III, BRA project #7040, Final Report, UCL, 1993. (Human-computer interface design and multimodal interface)

MULTIWORKS, Esprit II, R&D project, Final report, OLIVETTI, 1992. (MULTImedia WORKStation : design of a multimedia workstation including speech synthesis, speech recognition, human-machine dialogue in addition to standard multimedia functionalities)

COCOS, Esprit I, R&D project, Final report, BULL, 1989. (Computer and Component Software)

## Others Project References

CLIPS/IMAG is partner in the C-STAR II project (International Consortium for Speech Translation)

**Hervé Blanchon (main correspondant for the project)**

Hervé Blanchon defended his Ph. D. Thesis in Computer Science on January 94 on the definition and study of the "Dialogue-Based Machine Translation for monolingual authors" concept. He focussed on the global architecture of such systems and on the interactive disambiguation process. Then, he spent one year at ATR-ITL (Japan) as an associate researcher implementing and evaluating interactive disambiguation of English. He received the best paper award at NLPRS'95 for this work that has also been presented at IJCAI-97 and HCI-97. Since September 95 he is an Associate Professor at the University Pierre Mendès-France (Grenoble). He carries out his research, in the framework of interactive disambiguation and clarification, within the GETA team of the CLIPS lab. In 98, he took the lead of the CLIPS++ group (CLIPS, LIRMM, LATL, LAIP), a partner member of the C-STAR II consortium (ETRI, ATR-ITL, IRST, CMU, UKA).

**Jean Caelen**

Born in 1947, Jean CAELEN is a CNRS senior researcher and vice-director of CLIPS laboratory. He manages since 1992, the French Man-Machine Communication Program supported by French government to stimulate scientific activities across French research laboratories in the domain of Man-Machine Communication (speech, natural language, vision and HCI). He participated as partner in COCOS Esprit I project, MULTIWORKS Esprit II Project, SAM Esprit I and Esprit II projects, CATS RTD, IT IV project and as associated partner in AMODEUS BRA Esprit II project. He is ACM, IEEE, ESCA, ACL, AFCET, AFIA member.
The field of his scientific skill is automatic speech recognition and multimodal dialogue. His present thematic interest concerns automatic recognition in natural and multimodal spontaneous dialogue. He published about 130 papers in the domain of the various aspects of speech processing (recognition, understanding and dialogue).

**Christian Boitet**

Born in 1947, Ch. Boitet presented his State Doctoral Thesis (on several mathematical and algorithmic problems related to MT) in 1976. In 1977, he became associated professor of computer science at Université Joseph Fourier (Grenoble 1).. He is full professor since 1987. He has been in charge of several research contracts aiming at reaching the operational stage (Russian-French, 1980-86) and the industrial stage (French National MAT Project, 1981-87). He has also been involved in and/or in charge of GETA's participation in several cooperative research efforts (pre-Eurotra (1978-82), Eurotra (1984-87), EuroLang research track on DBMT (1992-95), ATR-CNRS MIDDIM (1993-96), UNL (1996-), CSTAR (1996-)), and in bilateral cooperation programs (Canada (1971-72, 1982, 1985-87), Soviet Union (1973, 1975-), Malaysia (1979-), Thailand (1981-87, 95-), etc. Tchecoslovakia (1981, 1986, 1992), USA (1984-85), Morocco (1989-94), Hungary (1975, 1978, 1991-), China (1981-83, 87-)). He has been invited researcher at KDD Research Laboratories (1983) and ATR Interpreting Telephony Research Laboratories (1988, 1991, 1992-93 for a sabbatical year, 1994, 1995).
His current interests include personal dialogue-based MT for monolingual authors (GETA's LIDIA project and the UNL project), speech translation (CSTAR project), machine helps to translators and interpreters, portable & readable encodings for multilingual documents, integration of speech processing in MT, multilingual lexical data bases, and computer tools (specialized languages and environments) for lingware engineering and linguistic research.

**Jean-Philippe Guilbaud**

As a CNRS Research Engineer, Jean-Philippe Guilbaud is a linguist and developer of MT linguistic applications. His know-how encompass methods and techniques of developing grammars and dictionaries required to perform automated analysis and synthesis (of French, German, English and Spanish), and use of Specialised Languages for Linguistic Programming allowing for declarative grammatical specification and description : Q-Systems, ARIANE-G5. He worked on the Dialogue-Based Machine Translation framework implementing a non-deterministic multisolution French analyser allowing for interactive disambiguation. He also developed grammars and dictionaries for generating French, German and English. He is currently working on a French analyser producing Interchange Format Structures from transcripts of dialogues in the domain of travel planning and scheduling for the CLIPS++ group in the C-STAR II consortium.

**<u>Geneviève Caelen-Haumont</u>**

Born in 1948, Geneviève Caelen-Haumont is a CNRS senior researcher at CLIPS Laboratory. With Jean Caelen, she manages the research team GEOD. In PRC-CHM (National Research Program in Man-Machine Communication), she is responsible with Philippe Blache for the Work Group "Natural language processing and Intonation".
The field of her scientific skill is prosody and its relations with linguistic components (syntax, semantics) and pragmatics. Her present thematic interests concern prosody in natural and multimodal spontaneous dialogue, prosody in speech recognition, and the psycholinguistic approach of the prosody, namely the links between bottom-up / top down cognitive processes and the linguistic organization of prosody. She published 87 references in the domain of the various aspects of prosody (prosody and linguistic, prosody and psycholinguistics, prosody and speech recognition) and especially books or chapter in books about these topics. She is a an ESCA, ARC, SFA, IADA member.

**<u>Damien Genthial</u>**

Damien Genthial defended his Ph. D. thesis in Computer Science in January 91. He is an Associate Professor at the University Pierre Mendès-France (Grenoble). As a researcher in man-machine communication in the CLIPS Laboratory, he is an active member of the PILAF project of the TRILAN team : software linguistic tools for French written texts (`http://clips.imag.fr/trilan`), more particularly : tools for morphological parsing and generation, tools for syntactic parsing (construction of dependency trees), tools for detection and correction of errors. He is currently involved in the international consortium CSTAR-II, which aims at real-time translation of spoken utterances in the framework of tourism information. He is also organizer and chairman of the program comitee of the TALN-97 conference and member of the program committee and of the standing committee of TALN conferences since 1997.