



KEY TECHNOLOGIES

Human-Machine Interaction

Key words: *electronic document, information search, automatic language processing, software ergonomics, virtual reality.*

Starting with the desktop computing in the eighties and going on to today's 'Internet Age', computers have steadily become the key tool for all human activity. However, the interactive procedures between humans and machines need to be improved, easier to use, and more efficient. The relevant research at the Caen University is focussing on the following issues:

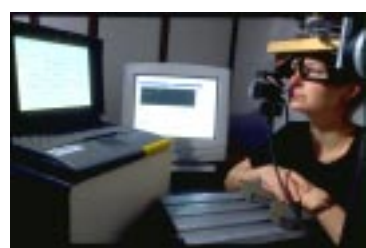
- ▶ **Electronic documents** are the primary study focus. Electronic documents (like printed copy today) have become the new communication medium providing additional functional capabilities: multimodality (integrating several types of documents), structuring, search and retrieval, co-operative drafting (several documents can be written from several different sites, in real-time).
- ▶ **Automatic language processing:** for exploiting document copy with applications in data research and retrieval, indexing, and speech synthesis
- ▶ **Software and document ergonomics:** an important factor to efficiency when working on a 'machine', a topic addressed through cognitive psychology and language
- ▶ **Virtual reality:** a new way for humans to access data and simulate complex systems

HUMAN POTENTIAL

The team is chiefly interdisciplinary, boasting roughly 30 employees and 45 doctoral candidates in different fields - computer science, the humanities and social science (psychology, linguistics, and geography). The Modélisation en Sciences Cognitives et Sociales (MODESCOS, cognitive and social science modelling) hub at the Maison de la Recherche en Sciences Humaines (MRSH, www.unicaen.fr/mrsh/modesco) is the organisational backbone co-ordinating the various fields and teams.

EQUIPEMENT

- ▶ Operator eye-tracking equipment (eyeputer)
- ▶ An observation and recording room of computer workstations
- ▶ A virtual reality work kit
- ▶ Computing facilities and computer networks



Eyeputer - AIRELLE

Université de Caen



METHODS

Testing methods through experiments with humans in an appropriate computer environment, modelling human (individuals and groups) behaviour to a 'machine' or in a 'computer environment'

Computer linguistics: software simulating or duplicating stages in text understanding skills
Software: web and XML technologies, smart agents

Linguistic modelling, Artificial Intelligence

SUPPORT TO BUSINESS SET-UP PROJECTS IN BASSE NORMANDIE

The Basse Normandie Region has rolled out all its resources to support business projects in the following areas:

- ▶ General funding
- ▶ Business project support
- ▶ Training programs
- ▶ Corporate user services at operations site
- ▶ Technology transfer to companies: www.gravir.org et www.rdt-bn.org

COMMITTED COMPANIES...

- ▶ **Electrel** (speech synthesis for the disabled)
- <http://www.electrel.fr/>
- ▶ **Memodata** (electronic dictionary, information retrieval application, email routing) - <http://www.memodata.com/>
- ▶ **Wanadoo Pro** (Wanadoo professional services: intranet, email order sales)
- <http://www.pro.wanadoo.fr/>
- ▶ **Captimark** (geographic information)
- <http://www.captimark.fr/>

SUPPORT TO BUSINESS SET-UP PROJECTS IN BASSE NORMANDIE

- ▶ Linguistic analysers for retrieving specific information from texts, for technological or economic monitoring tasks
- ▶ Improved speech synthesis through syntactic analysis
- ▶ 'Semantic' electronic dictionaries
- ▶ Effective use of an electronic atlas by regional decision-makers and researchers in human geography

CONTACTS

For general technological or scientific information

■ **M. Patrice ENJALBERT**
Département d'Informatique - Université de Caen
14032 CAEN CEDEX FRANCE

Phone: **33 (0)2 31 56 74 87**
Fax: 33 (0)2 31 46 73 30
email: Patrice.Enjalbert@info.unicaen.fr

■ **M. Jean VIVIER**
MRSH - Université de Caen
14032 CAEN CEDEX FRANCE

Phone: **33 (0)2 31 56 62 63**
Fax: 33 (0)2 31 56 53 81
email: vivier@mrsh.unicaen.fr

For economic or industrial information

■ **Normandie Développement**
57 Avenue de Bretagne
BP 1083
76173 ROUEN CEDEX 1

Phone: **33 (0)2 35 03 06 04**
Fax: 33 (0)2 35 03 07 86
email: ndrouen@normandydev.com

For further information:

Browse our website to find out all about the many opportunities in Normandy, at www.normandydev.com or send an email to ndcaen@normandydev.com or ndrouen@normandydev.com