Interagens

Interactive software and multimedia

Interagens s.r.l., founded in 2006, is specialized in advanced **Artificial Intelligence, Data Science,** and **Human-Computer Interaction** techniques, used to realize effective interactions between users and software or multimedia systems in several application areas: **video games, communication, education, training**

AI, Data Science, Human-Computer Interaction

Software & Multimedia Development

Video Games

Research & Development

Interagens s.r.l
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AI, Data Science, Human-Computer Interaction

- AI planning (classical planning, HTNs, adversarial planning) and situation-driven execution (behavior trees)
- Monte Carlo Tree Search enhanced by heuristics
- machine learning (e.g., reinforcement learning, Bayesian networks, SVMs, decision trees, HMMs, sequence and archetype analysis)
- visualization systems for sequence analyses
- planning, execution and analysis of experiments
- descriptive and inferential measures and tests
- design and execution of surveys, interviews, usability tests

Software & Multimedia Development

- software development in Java, Python, C#, Julia, Javascript, Actionscript, PHP
- integration of Artificial Intelligence systems for advanced management of interactions between users and applications
- development of graphical user interfaces based on usability criteria, preliminary tests and pilot studies
- development of accessible software and multimedia according to Web Accessibility Initiative guidelines
- software update and maintenance according to changes in contents, client's needs or users' features

Video Games

- design and development of commercial or serious video games
- Artificial Intelligence control methods for Non-Player Characters
- graphic design
- character design and animation
- development and maintenance of dialogue editing tools
- player interface design and development

Research & Development

- planning and execution of research projects on artificial intelligence, video games, computer-based learning and human-computer interaction
- preparation of research project proposals to submit to European and USA funding agencies
- participation to international research project consortia

Some Case Studies
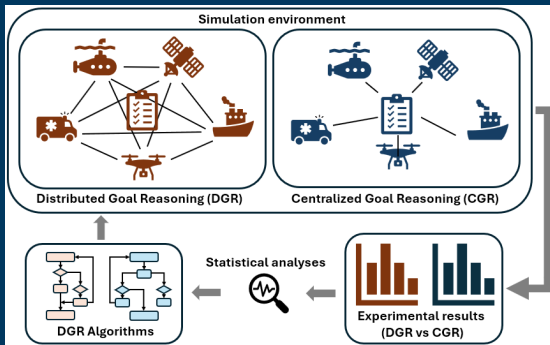
Distributed Goal Reasoning for Rapid and Robust Autonomy is an AI research project funded by the Office of Naval Research Global. In collaboration with US NRL's Navy Center for Applied Research in AI, the project is extending goal reasoning from the control of single / few homogeneous autonomous systems to the control of heterogeneous distributed autonomous systems, and experimentally testing it in a simulated environment.
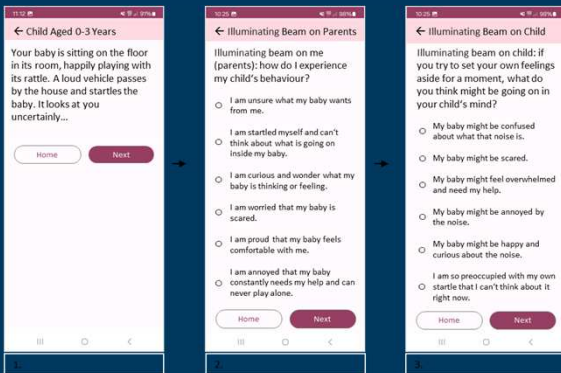
Helping Parents Minds is a citizen science project funded by the EU Horizon Europe Impetus program: https://impetus4cs.eu/helping-parents-minds/. Interagens has collaborated with the University of Ulm (Germany) to develop a mobile game prototype that trains parents' ability to think about the mental states underlying their children's behaviour and to respond in a way that supports their children's needs.

Charles River Analytics (CRA) is a US company that conducts leading-edge AI, robotics, and human-machine interface R&D and leverages that R&D to create custom solutions for organizations. Interagens has collaborated with CRA on a research project that has developed an AI system which merges symbolic and sub-symbolic reasoning for effective operation in open worlds, using complex games such as Monopoly, Minecraft and VizDoom as testbeds.


Alelo is a US company that creates instructional video game environments about foreign languages and cultures. Interagens has collaborated with Alelo on a research project atimed at developing a real-time user model to continuously evaluate the learner performance and personalizing instructional simulations accordingly.

FearNot! is a video game aimed at fostering awareness of bullying, realized in the eCircus European research project. The child observes a bullying episode, advises the victim about how to react, and then observes the consequences. The video game is based on virtual characters endowed with their own goals, emotions and memories. Interagens contributed to the development of the characters' minds using Artificial Intelligence techniques.

Interagens has collaborated with the US video game company **inXile Entertainment Inc.** to the development of the role-playing game "Torment: Tides of Numenera", that has been for a long time the most funded video game on Kickstarter with a total of $4,188,927 pledged by 74,405 backers.
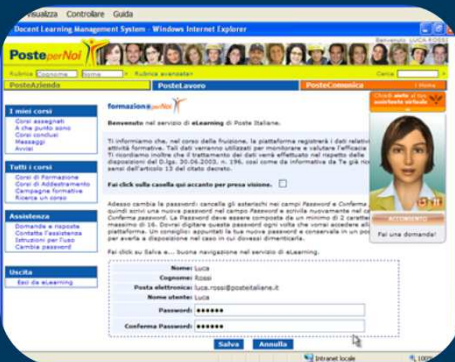
For developing a Virtual Tutor for the e-learning platform of the **Italian Post Office**, Interagens has done statistical analyses of the usage data of the platform to profile users, contributed to the design of the features of the Virtual Tutor, and planned the evaluation tests to assess the Tutor according to several experimental hypotheses and statistical tests.

Orient is a video game to foster awareness of different cultures, realized in the eCircus European research project. Interagens has realized a virtual character on a mobile phone that helps users play the game. The character uses Artificial Intelligence techniques to analyze the game in real time and provide context-relevant answers and interventions.

This Interactive Animated Character has been realized in accessibile mode and integrated in the e-learning platform of **Indire** (Italian National Agency of Documentation, Innovation and Educational Research). It drives learners through the multi-level navigation map, provides hints about the e-learning platform, and shows how to use the tools.

About us

Interagens was co-founded in 2006 by main partner Paola Rizzo. She has a PhD in Cognitive Science and an MSc in General and Experimental Psychology, has been a researcher in Italy, USA (Carnegie Mellon University, University of Southern California, Northeastern University) and the UK (University of London), has carried out many research projects on AI, video games, e-learning and human computer interaction, and has published about 60 scientific papers.

The software technology developed and patented by Interagens for controlling its Interactive Animated Characters has been awarded the first prize in a competition for international patents by the Province of Rome.

The business idea has been awarded the first prize in the "University and Business" competition by the Business Innovation Center of the Latium region.

The business plan has received grants from:

- the VII call of Law 266/97 of the City of Rome
- the call of the Province of Rome for "Creative Enterprises"
- the call of Start – City of Rome for multimedia enterprises
- the call of e2blab (University of Tor Vergata, Rome) for innovative ICT enterprises
- the "I=rp2" Call of Filas
- the "Centoimprese" call of the Lazio region