



Master's Degree in Human Interaction and Artificial Intelligence

MASTER'S DEGREE IN HUMAN INTERACTION AND ARTIFICIAL INTELLIGENCE

Start date
September

ECTS Credits
60

Course Duration
400 hours

Language
English

Degree
Master's Degree in Human Interaction and Artificial Intelligence, degree awarded by Universitat de Vic – Universitat Central de Catalunya (UVic-UCC).

Schedule
Monday, Thursday,
Friday mornings.

Course Leader

GERMÁN LEÓN

Germán León holds a Master in Interaction Design from Umea University and is an Entrepreneur. He has over 14 years of experience in technology and design and has multiple international patents. He is currently the CXO and founder of GESTOS, a start-up that focuses on computer vision and human-technology interaction. GESTOOS represents a breakthrough in gestural interaction and understanding human behaviour, thanks to patented developments in machine learning and applied artificial intelligence. He was the former director of Oblong Europe, designing the “Minority Report” interface. His vision is that spaces and devices become intelligent to understand and anticipate people’s needs.

Admission requirements

Official university degree or equivalent in design, engineering, architecture or art.

Presentation

The Master in Human Interaction and Artificial Intelligence prepares you to work in artificial intelligence for new business and human needs, always considering the social responsibility inherent to the practice.

Artificial intelligence is the natural evolution of software development and an excellent tool for developing and building new systems that are not limited to performing tasks but can also learn and develop independently. Over the years, object-oriented programming and computer-human interaction have coexisted as two separate entities. However, the tools and skills needed to create artificial intelligence are merging into a single profession.

The teaching of artificial intelligence must be consistent with our human values. Thus, this programme provides students with the knowledge to incorporate business needs, social accountability and human needs with use cases that ultimately become artificial intelligence.

This course aims to:

- + Explain the methodological and technical processes necessary to design and prototype Artificial Intelligence.
- + Show the latest trends and techniques in automatic learning and neural networks.
- + Spark critical thinking to achieve a humanist society.
- + Present new flows and processes of artificial intelligence design, translating mental models into mathematical models.
- + Analyse social models, paradigms and current technological trends.

Values

AI is skewed by nature because it needs data to learn. These data groups are limited by definition. Considering that human interactions can not always be registered, the key is to count on professionals to allow education based on human values and social restrictions on their AI designs. In this context, designers and developers can enter the market as part of companies and institutions to build better AI and as the torch carriers to build human, sensitive and accountable systems.

Tech trends develop fast. Planes and cars are driven autonomously. Houses are more and more connected and are more intelligent. Markets and the finance sector use AI to control stability and generate economic models. Social media channels are autonomous and conversational. DesignThe design has a pivotal role in this society; we need professionals to develop an equitable future for humanity.

The experience

Mentoring

Active mentoring of the student during the duration of the master, to optimise their evolution and professional interests.

Hands-on workshops

The workshops are experimental, hands-on and promote the creative development of the projects focusing on the subject matter of the specific module.

Career opportunities

According to McKinsey's prestigious 2019 annual report, artificial intelligence will create between 400 and 700 million jobs globally in various fields. Automation is already the key to any industrial success and will become more rigorous in the future. Every process and service in the world will have some degree of machine learning. You will be prepared to work in the following professional environments:

- + Junior/Senior AI Product UX/Interaction Designer.
- + Design managers and product owners.
- + Service designers and AI consultants for companies.
- + Artificial Intelligence start-ups.

Syllabus

MODULE 1

Introduction to Artificial intelligence and Interaction design

Overview of the field of Artificial Intelligence and the context of the economic and technological environment that characterises it. We will conduct an analysis of today's digital AI trends, the evolution of digital advances and disruptions over the last decades and their impact on markets all over the world. We will analyse industry leaders and the growth and marketing strategies to build successful digital businesses. This area covers many strategic tools for different business sectors, services and business models. We will learn how to perform benchmarking and SWOT analysis, think strategically, develop digital marketing strategies and understand the various tools and channels available.

MODULE 2

Design and development of interactions

We will become familiar with modern web and mobile development concepts, AMP, PWA, JAM STACK, hybrid development, and some of the most popular environments. The aim will provide the necessary tools to build HIFI prototypes and proofs of concepts. We will learn to identify potential technical and logistical issues that could interfere with the success of a project.

MODULE 3

Fundamentals of cognitive science and design

We will explore the impact of human psychology and physiology on design and technological evolution. We will examine fundamental human impulses and the role of the mind and emotions in the decision-making process. We will also investigate the relationship between humans, machines and nature, and behavioural design and habit-forming products. We will learn how to align human psychology with UX design.

Likewise, we will discover how to create meaningful products, what needs have to be accomplished and how to incorporate concepts such as empathy and ethics into the design process. The focus is on designing accessible solutions based on cognitive ergonomics that include human vision, intellect, memory, size and motor

control. We will have the opportunity to analyse and map human factors to digital concepts and interfaces, from a philosophical and exploratory approach to UX design and the nature of humanity.

MODULE 4

Machine learning and neural network models

This subject provides a practical approach to creating engaging and frictionless user interfaces. The assignment is closely related to user-centred technology, content strategy and interface development. We will design prototypes, wireframes and detailed user interfaces. We will analyse different business solutions and interfaces from a user interface perspective and draw flowcharts. Collaboratively, we will explore other prototyping formats and create wire flows and visual UI prototypes. We will become familiar with the latest trends in UI design, and we will work with the latest and most common tools in wireframing, prototyping and detailed UI design. We will learn to create responsive UI and mobile application designs based on user insights and business needs.

We will explore various online design resources to add agility to the design process. We will also learn to define design systems, estimate time and resources, and communicate user interface requirements to engineering teams.

MODULE 5

User experience architectures

We will learn to run usability tests in scalable lab formats with real users. We will also write test scripts, facilitate testing and evaluate the results to ensure that the solution meets its goals. We will create a backlog based on the results and prioritise improvements based on user and business needs and implementation complexity. To improve the solution, we will use an iterative methodology. A/B testing, heat maps, conversion funnels, recordings, form analysis and feedback surveys are other methods we will learn to use to evaluate user interaction, success rate and abandonment. We will also conduct competitive usability tests to evaluate prototypes of final projects, along with several competing solutions. We will learn how to write test reports and apply these lessons to final projects.

MODULE 6

Principles of artificial intelligence

Artificial intelligence has become an increasingly impactful discipline in science and technology. AI applications are embedded in the infrastructure of many products and industries, search engines, medical diagnostics, speech recognition, robot control, web search, advertising and even toys.

This course provides a broad overview of modern artificial intelligence. We will discover how machines can engage in problem solving, reasoning, learning and interaction. We will design, test and implement algorithms and appreciate this dynamic field. Specific topics in this block include machine learning, search, games, Markov decision processes, constraint satisfaction, graphical models and logic. The main goal is to equip it with the tools to tackle new AI problems.

MODULE 7

Final Master Thesis. Implementation of an AI project

The Final Master Thesis is the best opportunity to synthesise all the learning from the Master's degree. We will obtain the appropriate tools and knowledge to define and solve problems innovatively and collaboratively. The final project is interconnected with the different subjects. It will be a journey of discovery through learning by doing. We will learn to identify opportunities, design solutions and services focusing on the user's needs based on UI. We will work through ideation, validation and strategy to design prototypes and build artificial intelligence that can be tested. We will learn to define the development strategy and test its concept. Finally, this solution will be developed into a high-fidelity interactive prototype presented on a demo day.

Methodology

The methodology will be based on a learning-by-doing approach, working on projects, studying cases and sharing knowledge with peers and professors. Exercises, class debates and the final project will be the three main pillars on which this Master course will be based.

The Master in Human Interaction and Artificial Intelligence will allow students to:

- + Interpret the economic, technological and social context from a historical perspective to transform events into data.
- + Create products and services using programming languages from the artificial intelligence environment.
- + Apply existing Artificial Intelligence resources to solve problems.
- + Translate mental models into mathematical models and artificial intelligence algorithms.
- + Build a software architecture by mapping user and system needs.
- + Develop a software product or service with artificial intelligence using various neural network paradigms.
- + Apply learning from data mining using neural networks.
- + Apply intelligent information system designs to different professional, business and social environments.

Lecturers

MARCEL ALCOVERRO, CTO (Exipple) and Founder (Gestoos).

SUDHA JAMTHE, CEO (IoT Disruptions).

PASCAL LANDRY, UX Researcher (Gestoos).

CECILIA THAM, Founder and Principal (Futurity Studio).

MORE INFORMATION

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The teaching staff is likely to change according to reasons beyond the course programme. Elisava reserves the right to make changes in programming as well as the right to suspend the course two weeks before it starts if not reached the minimum number of participants, without further obligation of the amounts paid by each participant.

Master's and Postgraduate Degree programmes schedules can be expanded according to the selected course activities (weekends included).