



TECHNOLOGY CENTER

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

The background of the entire page is a dark blue field filled with a complex, glowing network of lines. These lines, in shades of light blue and magenta, connect various points, creating a web-like structure that suggests a digital or neural network. A large, solid purple circle is centered on the page, serving as a backdrop for the main title.

ARTIFICIAL INTELLIGENCE

RESEARCH, DEVELOPMENT AND INNOVATION AT THE UNIVERSITAT POLITÀCNICA DE CATALUNYA (UPC)

The Universitat Politècnica de Catalunya (UPC) specializes in the areas of architecture, science and engineering, including cybersecurity.

In this field, the main focus areas are:

- Privacy and data protection
- Cloud and Big Data
- Infrastructures security
- Consultancy, auditing and security analysis
- Trust and security services
- Cybersecurity compliance and business continuity
- Training and education

As a result of the UPC's recognized research track record in its areas of specialization, we can offer a wide range of services:

- R&D technology transfer projects
- Consortium for national and H2020 projects
- Patents
- Technology assessment
- Specialized facilities

The UPC is the leading university in Spain in volume of research and technology transfer to companies, and has become one of the major hubs of knowledge in Southern Europe.

AI ENABLED USER INTERFACE

- Personal assistants
- Chatbots

ADVANCED VIDEO ANALYTICS

- Biometry
- Facial recognition
- Object detection and human tracking
- Emotion recognition
- Gesture recognition

EDGE COMPUTING & IOT

- Sensor processing
- Self-diagnosis
- Smart predictors and estimators

DECISION BOARD

- Decision support system
- Enhanced risk management
- Operational efficiency
- Business optimization

RETAIL AND MARKETING

- Real-time personalized recommendations
- Improvement in engagement
- Pricing & merchandising optimization
- Context-aware marketing
- Social media analytics

LOGISTICS AND SUPPLY CHAIN

- Smart inventory management
- Route planning optimization
- Unattended warehouse robots
- Demand prediction

CUSTOMER SERVICE & SUPPORT

- Natural language processing
- Sentiment analysis
- Product documentation
- Chatbots

TECHNOLOGICAL CAPABILITIES

DATA SCIENCE

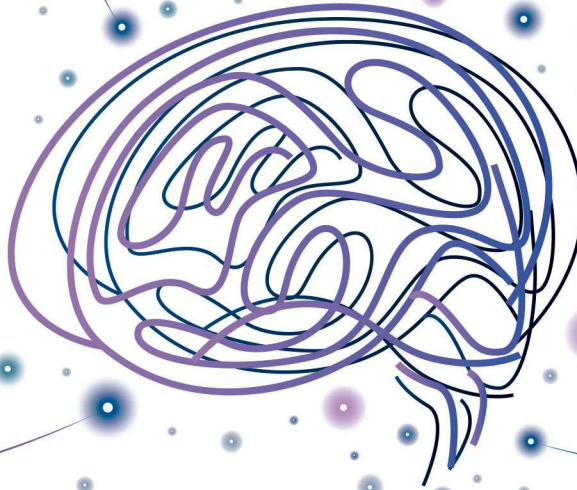
- Data mining
- Data analytics
- Big data

MACHINE LEARNING

- Un/semi/supervised learning
- Reinforcement learning
- Neural networks
- Deep learning
- Long short-term memory

SOFTWARE AUTOMATION

- Software bots
- Robot process Automation
- Business process modelling



CUSTOMER CARE SUPPORT

• Natural language
processing & synthesis

• Sentiment analysis

• Processing claim
documents

• Chatbots



MOBILITY

- In-car commands and communication
- Context awareness
- Pedestrian detection and obstacle avoidance
- Autonomous driving



INDUSTRY 4.0

- Automated diagnosis
- Predictive maintenance
- Quality testing automation
- Unplanned downtime avoidance
- Prediction of yield detractors

FACILITIES

- Remote building management
- Energy expenditure reduction
- Automated regulatory assessment
- Smarter security

ADVANCED TEXT ANALYTICS

- Natural language processing and synthesis
- Text generation
- Text to speech / speech to text
- Sentiment analytics

COMPUTER VISION

- Pattern detection, recognition and tracking
- Image recognition, classification and tagging
- Quality assessment automation
- Unattended vehicles and robots
- Digitizing paperwork

MODELLING

- Complex systems modelling
- State-transition modeling
- Automatic classification
- Knowledge representation and reasoning



SECURITY

- Intrusion detection
- Crowd counting
- Behavioral detection and modelling
- Network protection and surveillance



HEALTH

- Smart patient health monitoring
- Medical imaging diagnosis
- Cognitive impairment assessment
- Assistive robotics for elderly people



FINANCIAL AND INSURANCE

- Real-time fraud prevention
- Decentralized consensus algorithms
- Smart risk/credit assessment
- Increasing regulatory compliance



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