# Suggested Courses for the Tracks of the T2A plan of Computer Science and Engineering M.Sc.

# Ambient and data intelligence

Reference person: Sara Comai Suggested courses:

- 1. Sensor Systems
- 2. Machine Learning
- 3. Artificial Neural Networks and Deep Learning
- 4. Embedded Systems
- 5. Fundamentals of Multimedia Signal Processing

## Big data and data science

Reference person: Marco Brambilla Suggested courses:

- 1. Systems and Methods for Big and Unstructured Data
- 2. Streaming Data Analytics
- 3. Technologies for Information Systems
- 4. Machine Learning
- 5. Data and Information Quality

## **Bioinformatics and e-health**

Reference person: Marco Masseroli Suggested courses:

- 1. Bioinformatics and Computational Biology
- 2. ICT for Health Care
- 3. Machine Learning
- 4. Artificial Neural Networks and Deep Learning
- 5. E-Health Methods and Applications
- 6. Complessità nei sistemi e nelle reti

## Other relevant courses:

- 7. Bioingegneria Cellulare
- 8. Biomedical Signal Processing and Medical Images
- 9. Technologies for Sensors and Clinical Instrumentation
- 10. Data Mining and Text Mining
- 11. Knowledge Engineering
- 12. Natural Language Processing
- 13. Advanced User Interfaces

## **Business informatics, analytics and intelligence**

Reference person: Prof. Barbara Pernici Suggested courses:

- 1. Business Information Systems
- 2. Technologies for Information Systems
- 3. Process and Service Design
- 4. Data and Information Quality

## **Cybersecurity**

Reference person: Prof. Stefano Zanero Suggested courses:

- 1. Offensive and Defensive Cybersecurity
- 2. Cryptography And Architectures For Computer Security
- 3. Digital Forensics and Cybercrime
- 4. Resilience and security of Critical Infrastructures
- 5. Human and physical aspects of security
- 6. Informatica e Diritto
- Other relevant courses:
  - 7. Internet of Things
  - 8. Model Identification and Data Analysis
  - 9. Artificial Neural Networks and Deep Learning
  - 10. Embedded Systems
  - 11. Advanced Operating Systems
  - 12. Distributed Systems
  - 13. Code Transformation and Optimization

## Games, Entertainment, and Learning

Reference person: Franca Garzotto Suggested courses:

- 1. Advanced User Interfaces
- 2. Recommender Systems
- 3. Videogames Design and Programming
- 4. Design and Implementation of Mobile Applications
- 5. Computer Graphics
- 6. Image Analysis and Computer Vision
- 7. Educational Technology Design

## Other relevant courses:

- 7. Foundations of Artificial Intelligence
- 8. Artificial Neural Networks and Deep Learning
- 9. Image Analysis and Computer Vision
- 10. Multidisciplinary Project
- 11. Computer Ethics
- 12. Model Identification and Data Analysis

#### Internet engineering

Reference person: Gianpaolo Cugola Suggested courses:

- 1. Distributed systems
- 2. Networked software for distributed systems
- 3. Internet of things
- 4. Communication network design
- 5. Multimedia Internet applications
- 6. Streaming data analytics

Other relevant courses:

- 7. Systems and methods for big and unstructured data
- 8. Design and implementation of mobile applications
- 9. Wireless networks
- 10. Principles of programming languages
- 11. Data management for the web
- 12. Cryptpography and architectures for computer security

#### Pervasive systems

Referenti: Manuel Roveri, Luca Mottola Suggested courses:

- 1. Internet of Things
- 2. Hardware Architectures for Embedded and Edge AI
- 3. Distributed Systems
- 4. Networked Software for Distributed Systems
- 5. Machine Learning
- 6. Embedded Systems

#### Other relevant courses:

- 1. Advanced Operating Systems
- 2. Computing Infrastructures
- 3. Design of Hardware Accelerators
- 4. Uncertainty in Artificial Intelligence
- 5. Wireless Internet
- 6. Data and information quality
- 7. Streaming data analytics

#### **Robotics and vision**

Reference person: Matteo Matteucci Suggested courses:

- 1. Robotics
- 2. Image Analysis and Computer Vision
- 3. Machine Learning
- 4. Artificial Neural Networks and Deep Learning
- 5. Robotics and Design

6. Control of Mobile Robots

#### Software engineering for complex systems

Reference person: Elisabetta Di Nitto

Suggested courses:

- 1. Distributed Systems
- 2. Formal Methods for Concurrent and Real Time Systems
- 3. Distributed Software Development
- 4. Design and Implementation of Mobile Applications
- 5. Process and Service Design
- 6. Advanced Algorithms and Parallel Programming

Other relevant courses:

- 1. Networked Software for Distributed Systems
- 2. Principles of Programming Languages
- 3. Performance Evaluation and Applications
- 4. Machine Learning
- 5. Informatica e Diritto
- 6. Computer Ethics
- 7. Technologies for Information Systems

Additional suggestions:

- 8. Embedded Systems
- 9. Videogames Design and Programming
- 10. Robotics and Design
- 11. Internet of Things
- 12. Business Information Systems
- 13. ICT for Health Care