Artificial Intelligence for Connected Industries

European master to become expert in the application of artificial intelligence to connected systems, networks, IoT, robotics.

Intitulé officiel : Master Sciences, technologies, santé mention Informatique parcours Systèmes Embarqués Mobiles Sûrs et objets connectés Artificial Intelligence for Connected Industries

Présentation

Publics / conditions d'accès

The AI4CI Master admits students with at least a bachelor in computer science, computer engineering, electrical engineering, software engineering, telecommunications engineering at the M1 (first year of master). Admission is also possible at the M2 (second-year) level in case of 4 years of university studies.

Le master est accessible aux étudiants possédant au moins une licence niveau L3 ou un diplôme d'ingénieur en informatique ou électronique. Les enseignements étant en anglais, un certificat d'anglais de niveau minimum B1 pour le M1, et de niveau minimum B2 pour le M2 est demandé, sauf pour les citoyens de pays avec l'Anglais parmi les langues officielles ou ayant effectué la licence (bachelor) en anglais (une attestation de l'université d'origine certifiant ceci est néamoins demandée). L'admission en M2 est possible avec un niveau BAC+4 en fonction des formations suivies en 4ème année universitaire.

Objectifs

The AI4CI master is a European master opened at Conservatoire national des arts et métiers (Cnam), Paris downtown, France, as well as at partner universities in Germany, Romania, Spain, Ukraine.

The master training program covers:

- fundamentals of **artificial intelligence** and machine learning applied to networked systems.
- **automatics** and **advanced automation**, for industrial networks and robotics;
- advanced **network architectures, IoT and computer systems**;

The master teachers include world-class academics from our european partners and industry experts active in the master technical areas on international, European and national collaborative industrial research projects (H2020, ANR), standardization and open-source bodies (ONF, IETF, ETSI).

Modalités de validation

- Examens / Exams
- Travaux Pratiques / Labs
- Projets / Project

Compétences

Students graduating from the AI4CI Master are expected to integrate the following sectors :

Valide à partir du 01-09-2025

Arrêté du 13 mai 2025. Accréditation jusque fin 2029-2030. le 13-05-2025

Fin d'accréditation au 31-08-2030

Code : MR11601D

120 crédits

Master

Responsabilité nationale : EPN05 - Informatique / Stefano SECCI

Responsabilité opérationnelle : Joaquin BAYONA PARGA

Niveau CEC d'entrée requis : Niveau 6 (ex Niveau II)

Niveau CEC de sortie : Niveau 7 (ex Niveau I)

Mention officielle : Arrêté du 13 mai 2025. Accréditation jusque fin 2029-2030.

Mode d'accès à la certification :

- Validation des Acquis de l'Expérience
- Formation continue
- Contrat de professionnalisation
- Apprentissage

NSF :

Métiers (ROME) : Ingénieur / Ingénieure télécommunication (M1804) , Ingénieur / Ingénieure robotique en industrie (H1206) , Architecte réseaux informatiques (M1802)

Code répertoire : RNCP39278

Code CertifInfo : 117222

Contact national :

EPN05 - Informatique

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Smart factories, Industry 4.0.
Datacenter and cloud providers
IoT software editors
Embedded systems manufacturer
Internet and mobile application editors
Telecommunication network operators.
Smart-city and smart-grid network providers
Artificial intelligence start-ups
Security and Defense.

Enseignements

120 ECTS

M1 60 ECTS

Artificial Intelligence and Machine Learning for Connected Systems	USEEN6 6 ECTS
Operations Research	USEEN3 4 ECTS
Operating Systems and Computer Architecture	USEEN2 6 ECTS
Network security	USEEK7 6 ECTS
Network Architecture	USEEJ6 6 ECTS
Distributed and Federated Learning	USEES3 5 ECTS

2 US à choisir parmi 6 ECTS

Refresh in C & Bash Programming	USRS2H 3 ECTS
Sustainable IoT Technologies	USEES5 3 ECTS
Next Generation IEEE 802.11 standards	USEES6 3 ECTS
Data Management and Digital Transformation in Industrial Process Automation	USEES7 3 ECTS
FPGA Platforms: Programmable Embedded Systems	USEEV5 3 ECTS
Big Data Technologies for Connected Industries	USEES8 3 ECTS
Robot Predictive Maintenance	USEES9 3 ECTS
Advanced Python Programming	USRS78 3 ECTS
Integration of Virtual and Augmented Reality Technologies in Connected Industries	USEET1 3 ECTS

21 crédits à choisir parmi : 21 ECTS

Complex Networks: Data Analysis and Network Science	USEET2 6 ECTS
Parallel and Distributed Systems	USEET3 6 ECTS
Performance Evaluation for Connected Systems	USEEJ7 6 ECTS
Computer Systems Modeling and Verification	USEEN1 6 ECTS
Datacenter Design and Operations	USEET5 6 ECTS
FLE - French as foreign language	USEEJ9

	6 ECTS
Wireless Mobile Networks	USEEJ8 6 ECTS
Control System Theory and Engineering	USEES2 6 ECTS
Seminars from the Industry	USEET6 3 ECTS
Ethics and Sovereignty of Digital Infrastructures	USEET7 3 ECTS

M2 60 ECTS

Reinforcement Learning	USEET8 3 ECTS
Learning Robots	USEET9 3 ECTS
Robot Operating Systems	USEEU1 3 ECTS
Generative Artificial Intelligence for Advanced Automation	USEEW2 3 ECTS

2 UE à choisir parmi 12 ECTS

Business Process Modeling	USEEW1 6 ECTS
Peer-to-Peer Systems and Blockchain	USEET4 5 ECTS
Advanced Experimental Projects	USEEK8 6 ECTS
Network Operations, Virtualization and Automation	USEEN4 6 ECTS
Smart Industry 4.0 Systems	USEEU8 3 ECTS
Industrial Internet of Things	USEEW3 6 ECTS
Embedded Systems: Applications and Cybersecurity	USEEN5 6 ECTS

15 crédits à choisir parmi 15 ECTS

FLE - French as foreign language	USEEJ9 6 ECTS
Applied Artificial Intelligence	USEEU6 3 ECTS
WiFi and 5G Convergence in 6G	USEEU7 3 ECTS
Smart Industry 4.0 Systems	USEEU8 3 ECTS
Green AI Computing for Connected Industries	USEEU9 3 ECTS
Communications for Precision Agriculture and Farming	USEEV1 3 ECTS
Applications of AI and Cyber-threat Management	USEEV2

Applications of AI and Cyber threat Management	USEEV2 3 ECTS
Programming and Communication of a Robotic Arm	USEEV3 3 ECTS
AI4CI Activities: from research to business	USEEV4 3 ECTS
Advanced Python Programming	USRS78 3 ECTS
FPGA Platforms: Programmable Embedded Systems	USEEV5 3 ECTS

Master thesis - Internship	UAEE2B 21 ECTS