

Parcours Artificial Intelligence

Master Informatique



Durée
2 ans



Composante
UFR
Informatique,
mathématiques
et
mathématiques
appliquées
(IM2AG),
Grenoble INP
- Ensimag
(Informatique,
mathématiques
appliquées et
télécommunications),
UGA



Langue(s)
d'enseignement
Anglais

Présentation

The Master of Artificial Intelligence aims to provide all students, irrespective of their country of origin, with access to top-tier graduate training in AI fields where Grenoble's scientific research community excels.

The learning objectives of the AI Master are designed to provide students with in-depth knowledge and practical skills in AI. The main axes are as follows:

- **Acquisition of In-Depth Knowledge:** Students will acquire a deep understanding of the theoretical and practical principles of AI. The program covers areas such as machine learning, knowledge representation, natural language processing, among others.
- **Advanced Technical Skills:** Students will be trained to use specific programming tools and languages, such as Python and CUDA, and will work on practical projects to implement AI solutions.

- **Practical Applications:** The program encourages the application of AI concepts to real-world problems, with examples drawn from fields such as health, finance, robotics, etc.
- **Ethics and Responsibility:** Given the ethical implications of AI, the program includes modules on ethics and social responsibility of AI engineers. A specific Teaching Unit has been created to address these aspects.

This course is taught by research professors (lecturers, university professors), associate professors and professionals in the field.

Admission

Droits de scolarité

[Consultez les droits d'inscription](#)

Programme

Master 1e année

Semestre 7

	Nature	CM	TD	TP	Crédits
UE Applied probability and statistics	UE	22,5h	18h	9h	6 crédits
UE Algorithmic Problem Solving	UE		9h	6h	3 crédits
UE Data acquisition, processing and mining for AI	UE	12h		12h	3 crédits
UE Introduction to Artificial Intelligence	UE	19,5h		13,5h	3 crédits
UE Introduction to Artificial Intelligence Complementary	UE	12h		12h	3 crédits
UE Logic	UE	12h		12h	3 crédits
UE Programming	UE	1,5h		57h	6 crédits
UE AI project	UE				3 crédits

Semestre 8

	Nature	CM	TD	TP	Crédits
UE Explainable & Trustworthy AI	UE	12h		4,5h	3 crédits
UE Foundations of Data Science	UE	21h		12h	3 crédits
UE Information visualization	UE	12h		12h	3 crédits
UE Knowledge representation	UE	12h		12h	3 crédits
UE Multi-agent systems	UE	12h		12h	3 crédits
UE Numerical optimisation	UE			16,5h	6 crédits
UE Optimized Management & Processing for learning	UE	12h		12h	3 crédits
UE Scientific Methodology, Regulation and Ethics	UE	12h		12h	3 crédits
UE Research project	UE				3 crédits

Master 2e année

Semestre 9

	Nature	CM	TD	TP	Crédits
UE Mathematical Foundations of Machine Learning	UE	36h			6 crédits
UE Statistical learning: from parametric to nonparametric models	UE	36h			6 crédits

UE Mathematical optimization	UE	36h		6 crédits
UE Learning, Probabilities and Causality	UE	36h	18h	6 crédits
UE From Basic Machine Learning models to Advanced Kernel Learning	UE	36h		6 crédits
UE Optimization under uncertainty	UE	36h		6 crédits
UE Generative, Multimodal AI	UE	33h	3h	6 crédits
UE Natural Language Processing & Information Retrieval	UE	36h		6 crédits
UE Computer vision	UE	36h		6 crédits
UE Human Computer Interaction	UE	36h		6 crédits
UE Robotics	UE	36h		6 crédits
UE Computer Graphics	UE	36h		6 crédits
UE Large scale Data Management	UE	30h	6h	6 crédits
UE Information vizualisation	UE	18h		3 crédits
UE Multi-agent systems	UE	18h		3 crédits
UE Explainable & Trustworthy AI	UE	18h		3 crédits
UE Scientific Methodology and Performance Evaluation	UE	18h		3 crédits
UE Optimized Management & Processing for learning	UE	18h		3 crédits
UE Advanced models and methods in operations research	UE	36h		6 crédits
UE GPU Computing	UE	18h	18h	6 crédits

Semestre 10

	Nature	CM	TD	TP	Crédits
UE Research project	UE				30 crédits