emerging policy proposals to regulate autonomous driving. This module will discuss relevant issues related to the licencing, transfer and protection of autonomous driving technology. IP rights will play a critical role in enabling industry players to establish, and maintain, a position within this emerging market, with thousands of possibly competing patents being sought. The race to achieve market share will inevitably lead to a flurry of IP disputes, on the basis of patent, trademark, design, copyright or trade secrets infringements, as the Uber/WAYMO case might already show. Finally, this module will consider in details liability that might arise from autonomous driving enabled machines. Under which standards liability should arise? To whom liability should be attributed for damages caused by machines and vehicles autonomously operated by an AI? These are all very novel questions that have been considered so far only from a theoretical perspective but shall have soon to be tested in practice.

SPEAKER: **Nari LEE,** Hanken School of Economics.

12.30-14.00 / LUNCH

14.00-15.30 / MODULE 11

BLOCKCHAIN

Module 11 will focus on blockchain technology and alternative, decentralized architectures that rely on peer-to-peer networks and distributed technologies to provide secure and autonomous platforms for online interactions and communications (BitTorent, Bitcoin, Ethereum, etc). This module will analyse the legal framework in which these platforms operate, as well as alternative governance models combining regulation by code, contracts and social norms. «Distributed ledger technologies» (of which the blockchain is one instantiation) will also be discussed in relation to patentability (and exclusion thereof) either as mathematical method, business methods, or computer programs. In addition, this module will highlight how blockchain technology provides opportunities for both infringement and enforcement. Blockchain allows to track ownership/transactions, effect payments, integrate data, and provide transparency. Existing implementation of blockchain technology for IP management include inter alia the music platform Muse and Ujo Music or the blockchain patent exchange Kyna. Finally, this module will consider liability that might emerge from managing and using these technologies, especially in the context of financial transactions.

SPEAKER: **Jean-Marc DELTORN,** EPO.
SPEAKER: **Giancarlo FROSIO,** CEIPI.

15.30-16.00 / FAREWELL

C

| 0 | | 500 | | 1000 |
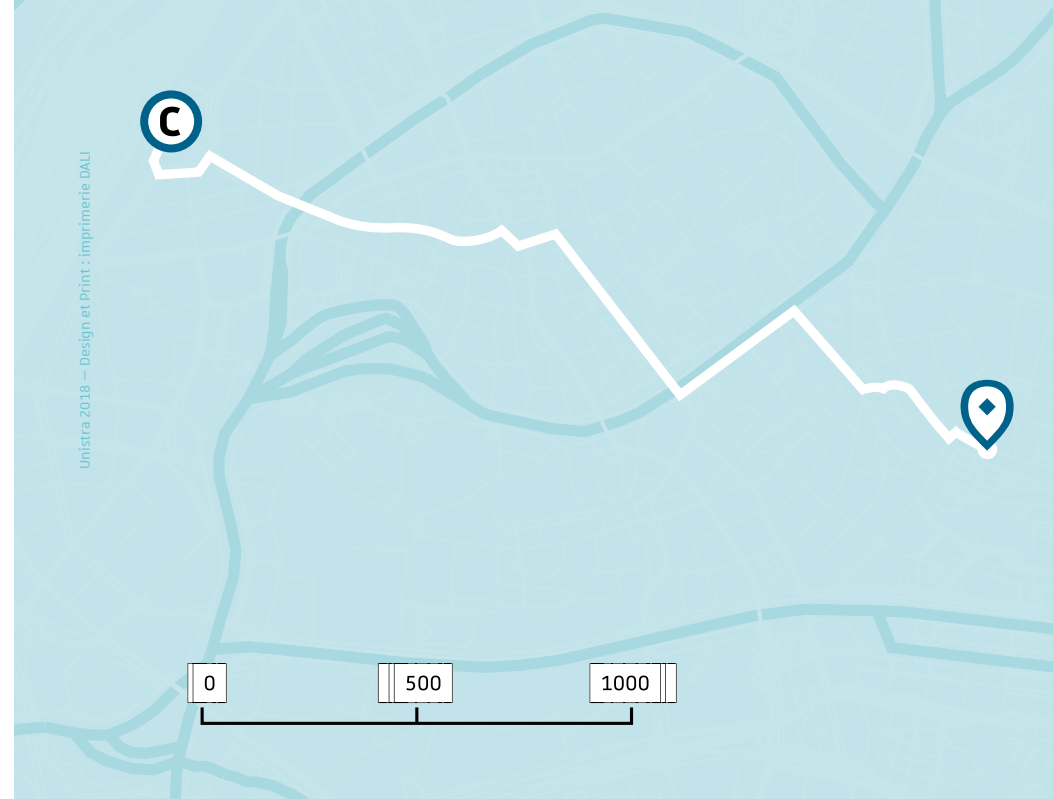
Practical information

VENUE

ESCARPE BUILDING / ROOM 339, 3RD FLOOR

CEIPI / UNIVERSITÉ DE STRASBOURG

11, RUE DU MARÉCHAL JUIN

67046 STRASBOURG CEDEX

ACCESS FROM THE TRAIN STATION

TRAMWAY / LINE C

DIRECTION / NEUHOF RODOLPHE REUSS

STOP / UNIVERSITÉ

For further information, please contact:

MR. GIANCARLO FROSIO

REGARDING **ACADEMIC ASPECTS**

Tel. +33 3 68 85 83 32   gcfrosio@ceipi.edu

MS. DIANA LAPLANCHE

REGARDING **REGISTRATION** AND **ADMINISTRATIVE ASPECTS**

Tel. +33 3 68 85 80 82   dlaplanche@ceipi.edu

CEIPI

Advanced Training Program

on Artificial Intelligence & Intellectual Property

24 26 MAY 2018

CEIPI

STRASBOURG

Centre d'études internationales de la **propriété intellectuelle** | CEIPI
Center for International Intellectual Property Studies
Institut für internationale Studien des geistigen Eigentums
Université de Strasbourg

www.ceipi.edu

DAY 1 — THURSDAY, 24 MAY 2018

9.00-9.30 / WELCOME ADDRESS

Christophe GEIGER, Professor of Law, Director General and Director of the Research Department,
CENTER FOR INTERNATIONAL INTELLECTUAL PROPERTY STUDIES | CEIPI
UNIVERSITY OF STRASBOURG | FRANCE

Giancarlo FROSIO, Senior Lecturer and Researcher,
CENTER FOR INTERNATIONAL INTELLECTUAL PROPERTY STUDIES | CEIPI
UNIVERSITY OF STRASBOURG | FRANCE

9.30-10.45 / MODULE 1

OVERVIEW | HISTORY AND THEORY OF AI REGULATION

Module 1 will provide an introduction to the training program in the first 30 minutes. The remainder of the class will discuss the theoretical, historical, and market landscape against which regulation of Artificial Intelligence (AI), Machine Learning (ML) and robots is emerging, with particular emphasis on machine-generated or computational creativity. AI's disruptive effects on traditional business models will force a re-consideration of the Intellectual Property (IP) framework. In this context, this module will first present legal tools available to protect AI, including trade secrets, copyright and patent protection. Later, it will briefly introduce the landscape of normative efforts in multiple jurisdictions that starts copying with a potentially ground-breaking revolution. This module will also consider how alternative approaches to computational creativity regulation will have far reaching commercial implications, shifting incentives for developing AI.
SPEAKER: Giancarlo FROSIO, CEIPI.

10.45-11.00 / COFFEE BREAK

11.00-12.30 / MODULE 2

AI AND COPYRIGHT | AUTHORSHIP

Artificial intelligence writes poems, novels and news articles, composes music, edits photographs, creates video-games, and makes paintings and other artworks. AI can engage in any creative activities as technology like 3D printing enables computers to create physical artifacts without the need of human intervention. Like Google's Deep Mind, which generates and performs music or creates artworks, AI does so by listening to other music or analysing previous artworks online. Which are the conditions for protection of creations generated by deep neural networks under the main copyright regimes? Is AI an author according to tradition copyright standards? Should traditional copyright standards such as originality apply, and perhaps machine-generated creative works fall in the public domain? This module will try to provide an answer to these basic issues surrounding AI's creativity by looking into legislation implemented in several jurisdictions and relevant case law.
SPEAKER: TBC.

12.30-14.00 / LUNCH

14.00-15.30 / MODULE 3

AI AND COPYRIGHT: OWNERSHIP AND INFRINGEMENT

After reviewing standards for AI's authorship, Module 3 will delve into complex matters related to ownership of machine-created works and infringement. Who owns the copyright in a work generated by a machine? Should specific arrangements conferring authorship to the agents spending skills, labour and efforts to create AI in the first place regulate the field? In this context, however, ownership might still be tricky to allocate. Does it belong to the person who built the system, the person who trained it, or the person who fed it specific inputs? Again, AI might engage into copyright infringement as a result of its creative activities. How does the dichotomy idea/expression, the notion of originality or the doctrine of fair use apply to computational creativity? Open questions become more complex in light of the growing power of ML algorithms to rewrite reality. ML tools can turn shots of horses into zebras, black bears into pandas, dogs into cats, apples into oranges, and porn stars into celebrities, multiplying grounds for violation of economic and moral authorship rights and personality rights. Where to cast relevant liability for infringement in all these cases?
SPEAKER: TBC.

15.30-16.00 / COFFEE BREAK

16.00-17.30 / MODULE 4

AI AND COPYRIGHT: AUTOMATED COPYRIGHT ENFORCEMENT

This module will focus on AI's applications in content moderation on digital platforms. In particular, copyright enforcement has been increasingly dealt through automated filtering and other algorithmic means. While semiotic governance online has become an issue that calls for extreme measures, taking down content through automated means poses challenges for online expression and access to information. In this scenario, governments and policy-makers are heavily pressuring companies to take action and a few jurisdictions have already responded with new regulatory initiatives. Meanwhile, judicial decisions have highlighted the inconsistences between automated enforcement and fundamental rights.
SPEAKER: Giancarlo FROSIO, CEIPI.

18.00 / WELCOME COCKTAIL

DAY 2 — FRIDAY, 25 MAY 2018

9.00-10.30 / MODULE 5

AI, DATA AND BIG DATA | OWNERSHIP AND PROTECTION

Module 5 will look into novel issues emerging in connection with AI and data management. Data and Big Data processing is indeed a fundamental portion of machine learning. On one side, data ownership might emerge as critical issue to be carefully considered when dealing with AI and ML systems. Developing AI and ML systems generally involves training it using large datasets, so the system can continuously improve its decision-making abilities. Who owns the IP in the datasets which are used to train the system? Although data might be freely available online, it cannot be used for any purpose. Therefore, genuine issues of liability for use of proprietary data in ML processes might arise. On the other side, data protection regulations will play an important role in the evolution of AI and ML systems. This section will consider relevant legislation and case law, with particular emphasis on the interpretation of the upcoming EU General Data Protection Regulation's provisions on profiling and automated decision-making.
SPEAKER: TBC.

10.30-11.00 / COFFEE BREAK

11.00-12.30 / MODULE 6

PATENTING AI

Module 6 will consider a vast array of issues related with patenting AI and ML systems. In this context, this module will review international legislation, case law and patent offices' practices, with special emphasis on EU-US comparative analysis. First, a fundamental challenge for protecting AI technologies with patents involves claiming subject matter that is patent eligible. Also, this module will consider how to identify what contributed to the development of an AI-related patent for the purposes of determining whether someone was an inventor. Further, satisfying disclosure requirements can be challenging when seeking patent protection for AI-based inventions. What should be disclosed in AI inventions to meet the requirements? Again, how an AI-based invention claim should be drafted? How does the doctrine of equivalents apply to AI inventions? Do different standards apply to rule-based systems and neural networks?
SPEAKER: Jean-Marc DELTORN, Patent examiner, European Patent Office, EPO.

12.30-14.00 / LUNCH

14.00-15.30 / MODULE 7

AI-GENERATED INVENTIONS | INVENTIVENESS AND OWNERSHIP

What if an AI-enabled machine invents something? What if an AI algorithm—without any human intervention—develops a new business method, a drug, a machine, or other invention? What if an AI develops a technical improvement of itself? In this respect, as well as in the copyright domain, AI challenges the most basic patent notions. Can a robot be an inventor? Who owns AI generated inventions? This section will present the conditions under which the products of AI processes/systems can be granted

protection. The issue of industrial applicability and plausibility will be discussed, as well as the relation to article 64(2) EPC (when the AI parent process is patentable). The problem of inventive step will be discussed too as well as the issue of defining the person skilled in the art when machines are imbued with an increased level of autonomy and (technical) creativity. The second part of the presentation will be devoted to the issue of inventorship and the (necessary) mention of the inventor on the title. This section will also expand upon the identification of the inventors and the difference between US and EU.

AI-GENERATED INVENTIONS | NON-OBVIOUSNESS AND PRIOR ART

As part of the "All Prior Art" project, an AI system continuously produces any possible meaningful combinations from published patents. A sister website "All The Claims" is attempting the same thing, but with the use of claims. These projects presumably aim at making the published concepts not patentable. Algorithms, AI and deep learning could potentially make everything under the sun prior art. This might support the idea that AI generated inventions without human intervention should be generally excluded from prior art. Is this the case? To which extent publication of computer-generated content should be treated as prior art and allowed to prevent others from obtaining patent protection on independently created inventions? Under current law and practices, do automatically generated claims qualify as prior art? Should automatically generated claims qualify as prior art?
SPEAKER: Jean-Marc DELTORN, EPO.

15.30-16.00 / COFFEE BREAK

16.00-17.30 / MODULE 8

AI AND PATENT ENFORCEMENT

In the same way that AI challenges traditional concepts of authorship and inventorship, it also raises fundamental challenges to the concept of enforcement. The latter is generally understood as requiring the participation of the right holder and public authorities and is characterised by the implementation of fair trial basic tests. This session explores the possibilities arising from devices that automatically enforce intellectual property rights and what does self-enforcement mean for legal theory and in daily practice. This session will also present advances in deep learning relating to IP enforcement and how practice in courts and legal firms is being transformed by data analytics and artificial intelligence.
SPEAKER: Xavier SEUBA, Senior Lecturer, CEIPI.

DAY 3 — SATURDAY, 26 MAY 2018

9.00-10.30 / MODULE 9

AI, TRADE SECRETS, AND MEDICAL INNOVATION

This module will consider trade secrets as an additional legal tool for protecting AI. In this respect, this module will contrast patent protection for AI inventions with trade secrets protection and consider potential shortcomings of patent protection. Unlike a patent, whose granting period might take a few years, trade secret protection arises automatically if secrecy of information creates a competitive advantage and there are reasonable measures in place to maintain secrecy. In this regard, trade secret protection may be especially well-suited for fast developing and changing AI inventions, whose improvements occur at an extremely rapid pace. This module will consider the international protection of trade secrecy for AI by magnifying on some key jurisdictions. In particular, this module will discuss as privileged case study AI and trade secret in relation to medical innovation, with special emphasis on personalised medicine.
SPEAKER: Nari LEE, Professor, Hanken School of Economics, Finland.

10.30-11.00 / COFFEE BREAK

11.00-12.30 / MODULE 10

AUTONOMOUS DRIVING

Module 10 will discuss connected and autonomous vehicles as an emerging field where AI might raise relevant IP, trade secrets, and liability issues. This module will first introduce the landscape of autonomous driving projects and market applications. It will map out present legislation and