of autonomous driving projects and market applications. It will map out present legislation and emerging policy proposals to regulate autonomous driving. This module will discuss relevant issues related to the licensing, 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, IP 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

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 (BitTorrent, 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/tranactions, affect payments, integrate data, and provide transparency. Existing implementation of blockchain technology for IP management include inter alia the music platform Muse and tio 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

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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 reconsideration 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 coping 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 FROISID, CEIPI.

10:45-11:15 / COFFEE BREAK

11:15-12:45 / MODULE 2

AI AND COPYRIGHT: AUTHORSHIP

Artificial intelligence writes novels, news and 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 analyzing 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 in Europe and the US. Copyright owners might face relevant regulatory changes on AI-generated works, shifting the balance of power between creators and users of AI-generated art.

SPEAKER: Andres GUADAMUZ, Senior Lecturer, University of Sussex, United Kingdom.

13:00-14:00 / 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 concerning authorship to the agents operating 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 the 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: Andres GUADAMUZ, Senior Lecturer, University of Sussex, United Kingdom.

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 with 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 inconsistencies between automated enforcement and fundamental rights.

SPEAKER: Giancarlo FROISID, 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 to be considered carefully when dealing with AI and ML systems. Developing and deploying AI and ML systems generally involves the use of large datasets, so the system continuously improves 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 rules present 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: Andres GUADAMUZ, Senior Lecturer, University of Sussex, United Kingdom.

10:30-11:00 / COFFEE BREAK

11:00-12:30 / MODULE 6

PATING AT

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 office 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? To different standards apply to rule-based systems and neural networks?

SPEAKER: Jean-Marc DELFORT, 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 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? 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 the 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: Andres GUADAMUZ, Senior Lecturer, University of Sussex, United Kingdom.

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 inventory, 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 texts. 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 enforcement and how practice in courts and legal firms is being transformed by data analytics and artificial intelligence.

SPEAKER: Xavier SEUBA, Senior Lecturer, University of Law, Strasbourg, France.

19:00 / WELCOME DINNER

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. This module will contrast patent protection for AI inventions with trade secrets protection and consider potential shortcomings of patent protection, in general. 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 occurs at an extremely rapid pace. This module will consider the international protection of trade secrecy for AI by looking into recently adopted EU trade secrets directive, with some legislative examples. In particular, this module will discuss a case study where a trade secret and patent protection plays an increasingly interacting role in relation to medical innovation, with special emphasis on personalized medicine.

SPEAKER: Nari LEE, Professor, Hanken School of Economics, Finland.

10:30-11:00 / COFFEE BREAK

11:00-12:30 / MODULE 10

AUTONOMOUS DRIVING

This module 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 protection. The issue of industrial applicability and plausibility will be discussed, as well as the relation to article 45(2) EPC (when the AI parent concept 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 inventiveness and the (necessary) mention of the inventor on the title. This section will also expand upon the definition of the inventors and the difference between EU and EPC.

SPEAKER: Jean-Marc DELFORT, EPO.