AI AND HOW IT WILL IMPACT THE TTO

PRESENTED BY:

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UNIVERSITY OF ALBERTA (UALBERTA) FACTS

UNIVERSITY OF ALBERTA

- Located in **Edmonton**, Alberta's capital
- **38,311** students from **148** countries
- **15,000** employees
- **18** faculties, **5** campuses
- **$513** million in sponsored research income (top 5 in Canada)

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UNIVERSITY OF **ALBERTA**   EDMONTON ECONOMIC DEVELOPMENT

- Not-for-profit joint venture
- TTO of UAlberta plus region's largest business incubator/accelerator
- ~60 full-time, part-time staff & contractors

Companies, entrepreneurs, and inventors who work with TEC are more successful

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TEC Edmonton

UNIVERSITY OF **ALBERTA**   EDMONTON ECONOMIC DEVELOPMENT

TOP BUSINESS ACCELERATOR
LINKED TO UNIVERSITY
UBI GLOBAL 17/18
WORLD

Ranked **#3 World Top Business Accelerator** – Linked to University

By
UBI Global in 2018

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Alberta Machine Intelligence Institute (AMII)

- **AI research centre** located at the University of Alberta
- One of the **top machine learning research centres** in the world
- Edmonton one of three centres identified in $125 million Pan-Canadian AI Strategy of Federal Gov't (Montreal, Toronto-Waterloo)
- **DeepMind & RBC Research** - Major players in AI setting up locations in Edmonton

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At a glance: Alumni recruitment

Industry   **Academia**

And many others…

At a glance: Researchers

Michael Bowling	Randy Goebel	Russ Greiner	Robert Holte	Patrick m. Pilarski	Dale Schuurmans
Or Sheffet	Richard s. Sutton	Csaba Szepesvári	Martha White	Yutaka Yasui	Osmar Zaïane
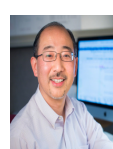
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IP HOLDING COMPANY 10PI

- Owned by 10 Principal Investigators and Business Director of AMII

- Master Option to license IP developed at Institute

- Pre-set terms and conditions for licensing

- Pre-agreed ready to sign documents

OPTION SCOPE LIMITATIONS

- Applies to IP created through funding from Institute: researchers may have independent research programs independent of Institute

- Researchers sign an Acknowledgement of Terms prior to participating in Institute-funded research

- Option must be exercised within 9 months of disclosure

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LICENSE TERMS

- **Tiered Royalty on Gross Sales**: flow-through to sub-licensee sales
- **No upfront payment** or milestone payment
- Licensee pays patent costs during option and license term
- **Sub licensing:**
    - % of any additional royalty plus % of other considerations
    - flexibility to do non-royalty sub-licensing: upfronts/milestones/equity
    - flexibility on choice of sub-licensee: non arm's length needs approval

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PATENTS VS. COPYRIGHT

Patents:
- Institution approval required for:
  - Non-royalty based sub-licensing
  - Sub-licensing milestones

Copyright:
No approval required

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OTHER CONSIDERATIONS

- **Addition/change of PIs/Inventors**: General Partnership-Limited Partnership model
- **Non-arm's length sub-licensing** (Spin-off):
  - COI managed through both Institution and Institute
- **Length of time** to develop an Umbrella model
- **Importance of having a champion**: trust relationship with former TEC EIR representing the Institute
- Appropriate consultation with stakeholders

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10PI MODEL IN PRACTICE

- 4 Commercialization Projects on the go:

    - **1** Spin-off created

    - **2nd** Spin-off in the works

    - **2** in investigation stage

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IP HOLDING COMPANY 10PI

Pros:
- Avoids case-by-case discussion with PIs
- Gives PIs greater control over their IP
- Time to license: spin-off deal signed within a week

Cons:
- Institution has no involvement in licensing decisions
- Pre-set terms may not work in certain situations

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WHAT HAVE WE LEARNED?

- **Faster time to license:** need for Umbrella/Express models

- **Non-traditional IP** (copyright etc.) more prevalent

- **Flexible deal structure** on non-traditional IP: one-time/milestone based payments common

- **Know-how** (and therefore individuals) becoming more important than patents

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THANK **YOU**!

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Energy
Infrastructure, mining and commodities
Transport
Technology and innovation
Life sciences and healthcare

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Artificial Intelligence and Tech Transfer

Norton Rose Fulbright LLP
Maya Medeiros, Partner

AUTM Webinar
March 14, 2018

Overview

- What is the impact of AI?
- What are key considerations for commercializing AI innovation?

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> # *AI is a field of computer science that includes machine learning, natural language processing, speech processing, expert systems, robotics, and machine vision.*

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Energy sector

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Infrastructure, mining and commodities sector

Recycling Robots – A Look Inside the World's First AI Waste Management Centre

By Anthony Cuthbertson
June 13, 2014 12:54 BST

ZenRobotics has developed the first ever recycling process controlled by artificially intelligent robots. (ZenRobotics)

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Machine learning enters mines

Penny Stewart discusses the rise in the use of machine-learning algorithms on mine sites

Penny Stewart | 22 Dec 2016 | 12:18 | Opinion |

MATT SIMON SCIENCE 05.25.16 01:26 PM

THE FUTURE OF HUMANITY'S FOOD SUPPLY IS IN THE HANDS OF AI

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Financial institutions sector

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AnlageFinder robo-advisor for experienced and first-time investors / development in cooperation with fintech fincite / maxblue app for mobile securities trading

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Technology and innovation sector

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Transcript sector

AI Captain!
Maritime Robotics to Revolutionise Shipping (And Piracy)

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UPS tests drone delivery system

BI Intelligence
Feb. 23, 2017, 4:44 PM   313

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Commercialization of AI innovation

- IP protection for AI innovation
- Collaboration frameworks
- Licensing considerations
- Ethical and legal considerations for AI

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IP Protection for AI Innovations

- IP protection for AI innovation impacts valuation, commercialization and enforcement
- Example AI innovation:
  - Classifiers or rules for applications/use cases
  - Network topology
  - Training data sets
  - Hardware and software components
  - Mix of custom and third party components (e.g. open source)

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IP Protection for AI Innovations

- **Patents:** technical processes, machines, improvements
- **Designs:** hardware form factors, UI elements
- **Trademarks:** mark, logo
- **Copyright:** code, compilations of data, APIs, UI elements, graphics
- **Trade secrets and confidential information:** backend code, know-how and "secret sauce"

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Patents for AI Innovation

- Protect investment, freedom to operate
- USPTO designated class 706 for AI
- Preliminary search results:

▲ Assignee	
IBM	(1077)
MICROSOFT TECHNOLOGY LICENSING	(600)
GOOGLE	(225)
NEC	(165)
SONY	(160)
FUJITSU	(150)
SIEMENS	(148)
QUALCOMM	(136)
HITACHI	(135)
ORACLE	(127)
More...	

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Patent Eligibility

- No clear line for patent eligibility of AI innovation
- Highlight technical problems and solutions
- Written description should refer to structural details, special programming
- Computer-readable medium claim
  - *Computer-readable medium storing instructions that when executed by a processor cause it to perform X*

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Trade-secrets and confidential information

- Algorithms and processes (whether or not patentable)
- AI data such as neural network topology, training data, input data, weights and parameters
- Requirements – must be kept secret, any formula, pattern, device or compilation of information used in business and which gives the owner an opportunity to gain an advantage over competitors
    - Lack of specific legislation in Canada v. the US
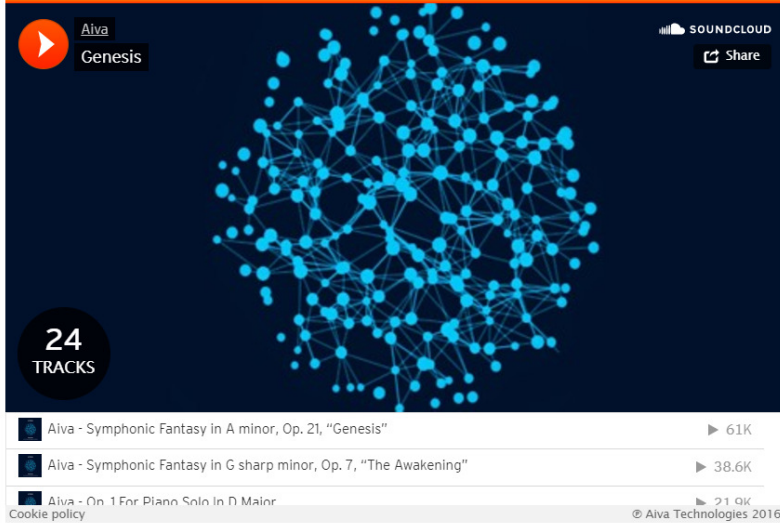- People management, compliance and due diligence

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New IP questions raised by AI innovation

- Machine generated IP
- Copyright
    - Who is the author?
    - Is the work an original work?
    - Is the work protectable by copyright?
    - Does copyright protection extend to machines?
    - Who is the owner?
- Patent
    - Who is the inventor?
    - What is the invention?
    - Is the invention patentable?
- Machine infringement of IP

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AI created music

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Collaboration Frameworks

- AI innovation often involves collaboration
- Different collaboration models emerging:
  - Technology collectives
  - Data collectives
  - IP collectives

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Licensing considerations

- Transfer rights or permissions to IP assets
- Manage risk and expectations

- AI is different than "typical software"
  - Autonomous decision making
  - AI algorithms and classifiers adapt over time
  - Large or unique data sets may be required
  - Subject matter experts provide feedback and training data

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Licensing considerations

- AI agreements from the perspective of:
  - AI providers
  - Data providers

- Scope
- Ownership of data, AI tool, improvements
- Compensation models for commercializing improved AI tool/results
  - Revenue share
  - License
  - Sublicense

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Ethical and Legal considerations impact IP

- AI needs to meet minimum ethical/legal standards for commercial adoption
- Existing legal framework already applies to AI innovation
  - Liability, Privacy, Regulatory, Consumer protection

- Ethical AI requires:
  - Human rights and values
  - Transparency
  - Accountability
- These ethical and legal standards can impact IP protection

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Artificial Intelligence

V

Analogue
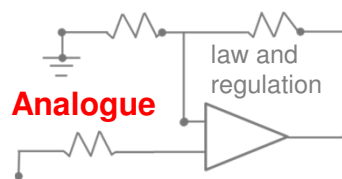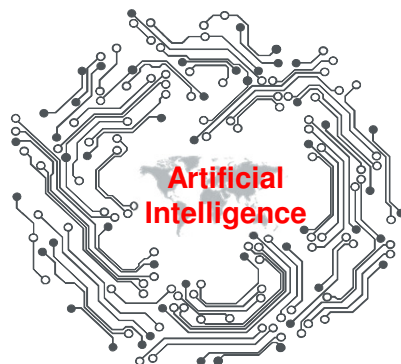
law and regulation

We are entering into an AI digital era governed by analogue law and regulation

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Any questions?
Check out: www.aitech.law

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