ARTIFICIAL INTELLIGENCE:

Thinking About Law, Law Practice, and Legal Education

DUQUESNE UNIVERSITY
School of Law

Presenting Sponsor: Reed Smith
Driving progress through partnership

gravity stack
Delivering Collective Intelligence in Law

LexisNexis

COZEN O'CONNOR
INTRODUCTION

Ganes Kesari
Co-founder & Head of Analytics

"Simplify Data Science for all"

Insights as Stories

Gramener

100+ Clients

Help apply & adopt Analytics

Our data science platform, Gramex is now open-sourced!
Smart Contract Risk Identification with AI
CHALLENGES WITH CONTRACT REVIEW

- Voluminous
- Deliberate Verbosity
- Tedious
- Error-prone
- Lower cognition
HOW CAN TECHNOLOGY HELP?

Images: Gmail; Grammarly; Skype
**HOW DO THESE WORK?**

“Programs that solve the problem” vs “Programs that *learn* to solve the problem”
HOW DO MACHINES LEARN?

Known Input → Machine learning how to do the job → Known Outcome

New Input → Machine learning how to do the job → Desired Outcome

AAPL → … $204.5, 207.4, 207.1, 205.2, … 210.5
"What a nice sunny ...day?"
WHY DEEP LEARNING?

Traditional Machine Learning

Input → Identify features to teach model → Person Name (Output)

Deep Learning

Input → Model automatically identifies features to learn → Person Name (Output)

NOT VERY DIFFERENT FROM HOW WE LEARN

Training ..Versatile Detection!
AI AROUND US - READING TEXT

GET INFORMED
GET INSPIRED
Stories Curated For You

FEATURED TECHNOLOGY NEWS ENTERTAINMENT DESIGN HEALTH

TIME 100 2019 Autism Awareness Month The Other Side of Anger
AI AROUND US – TRANSLATING TEXT
In a shocking finding, scientists discovered a herd of unicorns living in a remote, previously unexplored valley, in the Andes Mountains. Even more surprising to the researchers was the fact that the unicorns spoke perfect English.

The scientist named the population, after their distinctive horn, Ovid’s Unicorn. These four-horned, silver-white unicorns were previously unknown to science.

Now, after almost two centuries, the mystery of what sparked this odd phenomenon is finally solved.

Dr. Jorge Pérez, an evolutionary biologist from the University of La Paz, and several companions, were exploring the Andes Mountains when they found a small valley, with no other animals or humans. Pérez noticed that the valley had what appeared to be a natural fountain, surrounded by two peaks of rock and silver snow.

Pérez and the others then ventured further into the valley. “By the time we reached the top of one peak, the water looked blue, with some crystals on top,” said Pérez.
Our Work on Contract Risk Identification

- Categorize
- Assess Risk
- Simplify Reviews
PREPARING DATA TO TRAIN THE AI

Data:
100+ Documents
6000+ Clauses

Categories:
Agreement
Confidentiality
Dispute Resolution
IP Rights
Terms And Conditions
Warranty
Liability-Indemnity
Others
Payment Terms
Scope
Sub Contract

Icon by Smashicons on Freepik
Term. This Agreement shall be in force for a period of two (2) years from the Effective Date. This Agreement may be terminated by either Party at any time upon thirty (30) days written notice to the other Party. Provided however that the termination of this Agreement shall not relieve any Party of its obligations with respect to Confidential Information disclosed under this Agreement for a period of five (5) years after the expiry/termination of this Agreement.

**Categories:**
- Agreement
- Confidentiality
- Dispute Resolution
- IP Rights
- ✔ Terms And Conditions
- Warranty
- Liability-Indemnity
- Others
- Payment Terms
- Scope
- Sub Contract

**Criticality:**
- Non-Critical
- ✓ Critical
BUILDING THE MODEL

Data Preparation
- Gathering
- Structuring
- Labeling

Modeling
- ULM Fit Language model
- Built a Classifier – Criticality & Clause type

Transfer Learning
- Pretrain on WikiText
- Train on Legal text

User Workflow
- Interactive UI
- Human augmentation
1. **Gramener Technology will be...** the sole and exclusive owner of Gramener’s Confidential Information and the Project Plan is for the sole purpose of exploring the possibility of Data Analytics, Visualization and Consulting Services. This Master Services Agreement ("Agreement") is made on 16th February, 2015 ("Effective Date") by and between Gramener Technology and the Client.

2. **Gramener Technology will be...** a company incorporated under the provisions of the Companies Act, 1956 or having its registered office at Plot No.9/2, 2nd Floor, Sy.No.64, HUDA Techno Enclave, Phase – II, Madhapur, Hyderabad - 500081, Telangana, India ("Gramener") and the place of supply to Client (hereinafter referred to as "the Receiving Party").
Smart Contract Risk Identification

AI Driven legal documents analyzer.

Clause Types

Filter clause category. Total Clauses: **25**

- Confidentiality (3/3)
- Finance (0/0)
- Intellectual Property (0/0)
- Legal (6/6)
- Others (2/16)
- Non Compete (0/0)
- Non Solicitation (0/0)
- Scope (0/0)
- Sub Contract (0/0)

Contract Clauses

**THIS AGREEMENT** (the "Agreement") is made and shall be effective as of this 5th day of February, 2019 ("Effective Date") by and between:

- **Legal (98.84)**

ABC PRIVATE LIMITED, a company incorporated under the Companies Act, 1956, with its registered office at 100 West Beech Rd, New York 10027 (hereinafter referred to as "Client", which expression shall, unless it be repugnant to the context or meaning thereof, mean and include its successors and permitted assigns), of the One Part;

- **Legal (99.80)**

Gramener Technologies Inc, with office at 2, Research Way, Princeton, NJ - 08540 (hereinafter referred to as "Gramener" which expression shall, unless it be repugnant to the context or meaning thereof, mean and include its, successors and permitted assigns) of the Other Part;

- **Legal (99.87)**

"CLIENT" and "Gramener" are hereinafter collectively and individually referred to as 'Parties' or 'Party' respectively.
TAKEAWAYS

1. Acquire right Data
2. Structure & Clean Data
3. Plan for labelling
4. Factor business dynamics
5. Augment with human inputs
6. Build into workflow
7. Sensitize on accuracy
8. Plan for refresh
Machines will partner and cooperate with humans rather than become mankind’s biggest enemy.

- Jack Ma, Founder of Alibaba
Thank You!

Presentation deck available at

[gkesari.com/LawAI]

gramener.com

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Medium

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