**Machine Learning and Law**

(12/19/2016)

**Primary Focus:**

* Patent law (DCT) cases that are on appeal to the
  + United States Court of Appeals for the Federal Circuit
    - Specialized (only) federal appellate court that hears all cases on appeal involving U.S. patents.
    - Only court that has its jurisdiction based wholly upon subject matter rather than geographic location
    - Hears certain appeals from all of the United States District Courts, appeals from certain administrative agencies, and appeals arising under certain statutes
  + Federal Circuit has exclusive jurisdiction over appeals from
    - Article I tribunals:
    - Article III tribunals:
    - Congressional Office of Compliance

**Procedure:**

* Important chunks
  + **Trial Case**
    - Type of tribute
    - Parties and their lawyers
    - Judge
  + Appeal
    - First made by the appellant (lawyer A)
    - Responded by the appellee (lawyer B)
    - Appellant responding to appellee
  + Judges (judge C,D, … Z)
    - Find what might be either a ‘**harmless error**’ vs. ‘**reversible error**’
    - Judges discuss a **majority opinion** over a conference in an **written decision**.
      * Arguments made against the result of majority opinion issue **dissenting opinion.**
      * Arguments that concur with the result of majority opinion but disagree on reasoning file **concurring opinion.**
      * Unanimous agreement: **Per curiam**
  + Outcome
    - 0: Dismiss of an appeal / Affirm (with lower court’s judgement)
    - 1: Remand
      * May order to
        + a new trial be held,
        + the trial court's judgment be modified or corrected,
        + the trial court reconsider the facts, take additional evidence, or consider the case in light of a recent decision by the appellate court.

**Non-doctoral factors (Research Paper)**

1. Characteristics of Judges

- Such as whether they are liberal or conservative or whether they were appointed by a Republican or Democrat President.

- demonstrates that something other than doctrine strongly influences the outcome of many cases

2. Judges’ Preferences

“They believed that legal rules and methodology did not lead to a certain answer in many cases and therefore left the outcome to the preferences of the judge.”

“Jerome Frank asserted that judges should undergo Freudian psychoanalysis to better understand their own prejudices and, as a result, become better judges”

“Legal Realists”

3. Backgrounds

“It follows that the experiences that have shaped the mental classifications in the mind can and frequently will lead to misinterpretations of the problems confronting the individual”

“Hayek maintained that the classification of the stimuli performed by our senses will be based on a system of acquired connections that reproduce in a partial and imperfect manner the relationships existing in the external environment.”

“Individuals from different backgrounds will interpret the same evidence differently and in consequence make different choices.”

“These belief systems develop from life experiences with a myriad of influences—from **parents** and **family**, **peers**, **teachers**, **religious authorities**, **government leaders**, **public commentators**, and so on

“And it is differing belief systems that make for judges with differing judicial philosophies and for judges to be labeled either **liberal or conservative or either activist or restrained**.”

**Database**:

1. Court’s Opinions and Rulings (~10 yrs)
   1. PDF
2. Oral Arguments (~10 yrs)
   1. MP3
3. Create Relational Database
4. Feature Engineering
5. PDF 🡪 Text
   1. Parsing specific data
6. Oral Arguments