

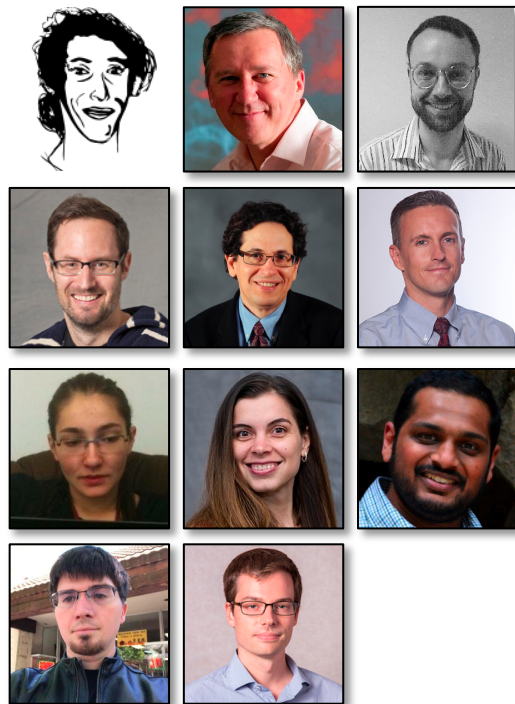
LEARNING WITH

**LIMITED
LABELED DATA**

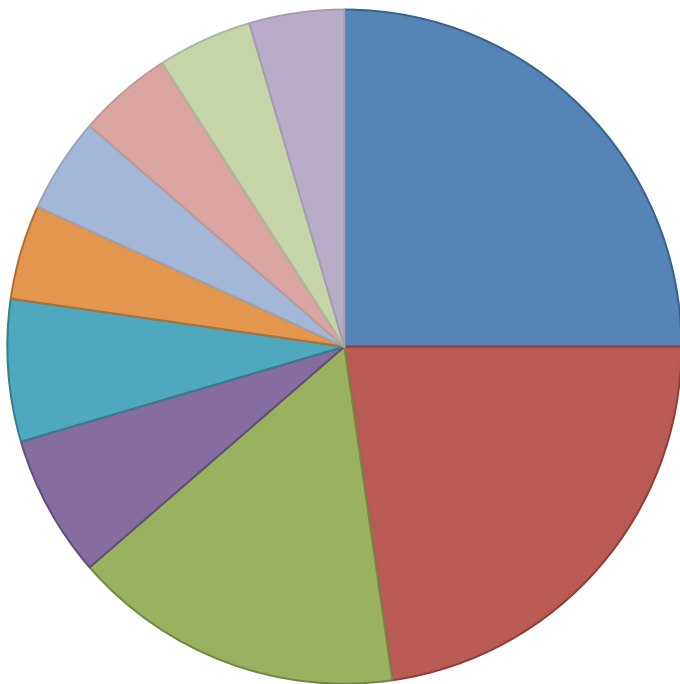
NIPS 2017

Thank you for a great workshop!

- 65 submissions
- 56 reviewers
- 44 accepted papers
- 11 speakers
- *Thank you to our co-organizers not at NIPS (Isabelle, Eugene, Christoph, Eduoard, Chris)*



Topics of Accepted Papers



- Semi-Supervised Learning
- Weak Supervision
- Transfer Learning
- Representation Learning
- Applications
- Multi-Task Learning
- Data Augmentation
- Active Learning
- Self-Training
- Knowledge Distillation

Highlights from the Keynotes

- Multi-task, multi-view---i.e. *coupling*---is critical
 - Tom Mitchell: “At NIPS 2027, we’ll look back and smile that we were tackling the hardest task in ML—learning single fns. in isolation”
- Injection of domain expertise via more informative priors:
 - Beyond L1 reg., GEC, logical constraints, etc.
- More creative, higher-level, and responsive weak supervision types:
 - GEC, logical constraints, feedback on explanations, AL, etc.



Highlights from the Keynotes

- Intersection of structured prediction with weaker supervision
 - Use of adversarial techniques
 - For SSL setting
 - Using GANs for SSL, data augmentation and generation via simulation, domain adaptation
-
- Panel: Insights from the applied side:
 - Selection of appropriate problems for ML
 - Representing label/task ambiguity
 - Replacing versus assisting!



Weak supervision: The New New Alchemy?

- One thing we're excited about: weak supervision
- Proposition: Turn noisy, low-quality supervision into gold (labels)
- Except here, we do have some theory! What can this help us to engineer?

Excited to chat more about this!



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THANK YOU!