Artificial Pathologists
Machine Learning Models for Histopathology

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1. Quick Facts on Ovarian Cancers (OC)

- ~300 women are diagnosed with OC each year in BC
- ~250 women die from OC each year in the province
- In 2009, 5 subtypes of OC have been identified
- In 2016, 2 new genetic subtypes have been identified
- Accurately identifying OC from tumour biopsies is critical for a successful diagnosis and prognosis

2. Teaching Computers to Mimic Pathologists

3. Learning Features Discriminative of Cancers

4. Learning to Identify Abnormal Regions Indicative of OC Subtypes in Biopsies

Identifies discriminative features directly from tissues
Generalizes well to tissue images from different centers
Black-box architecture, unintuitive to analyze

Comparison of the automatic system with six experts

Validates on 150 patients from different pathology centres

1. http://www.bc.cancer.bc.ca/

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