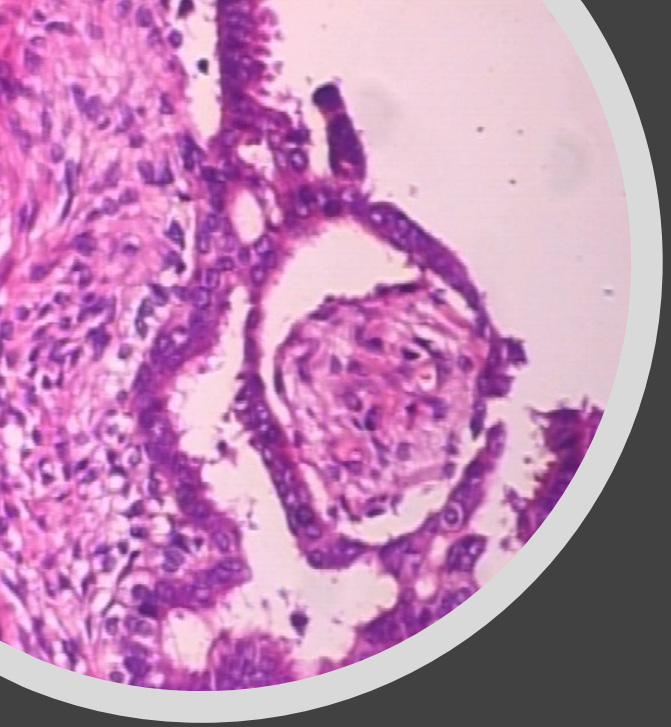
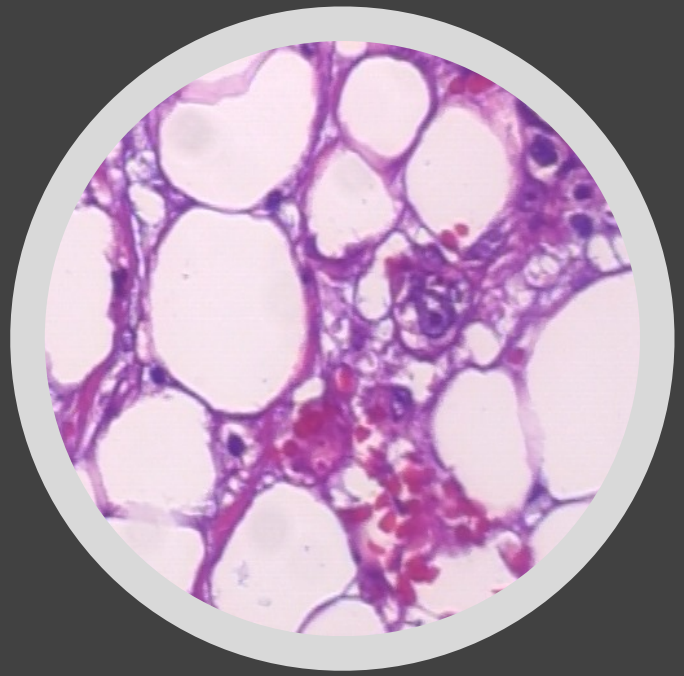
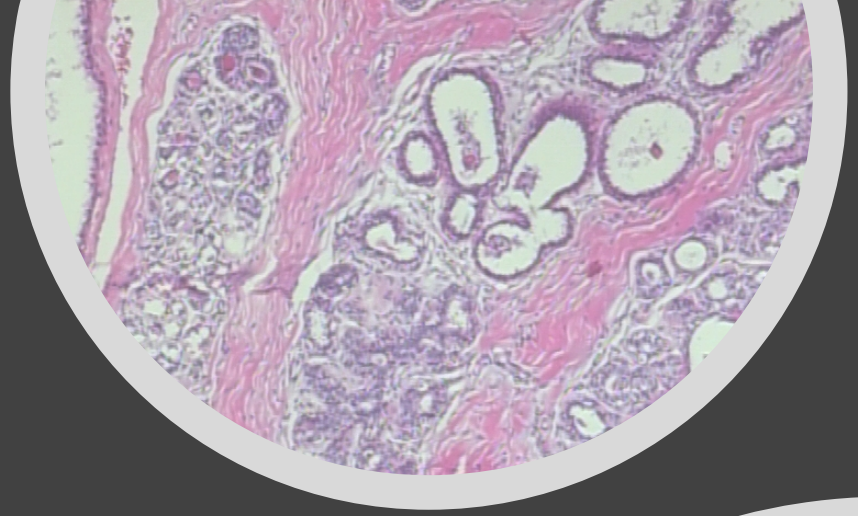
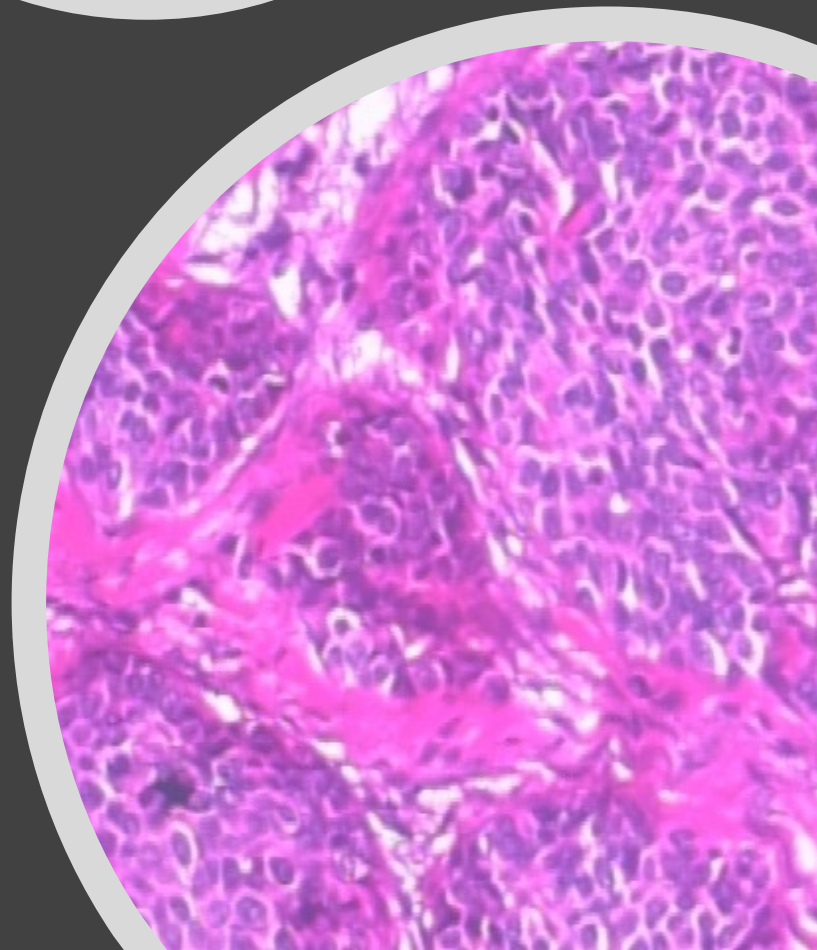






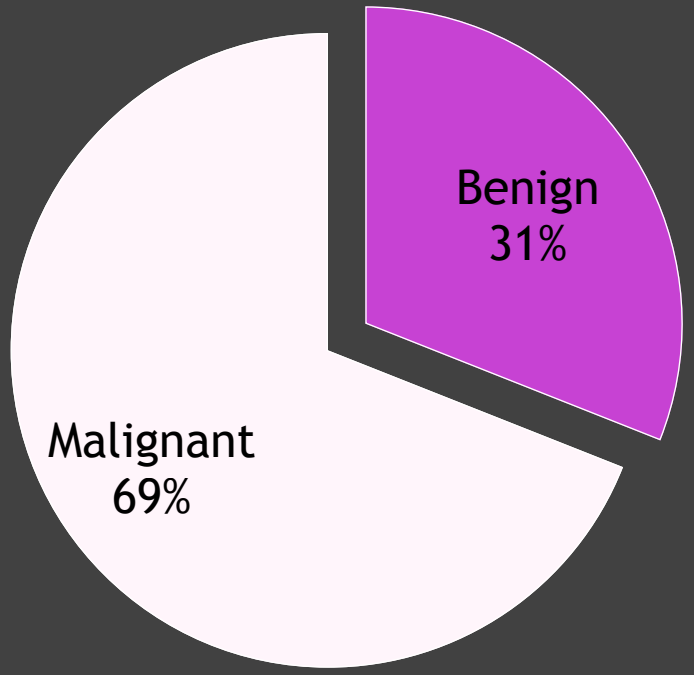


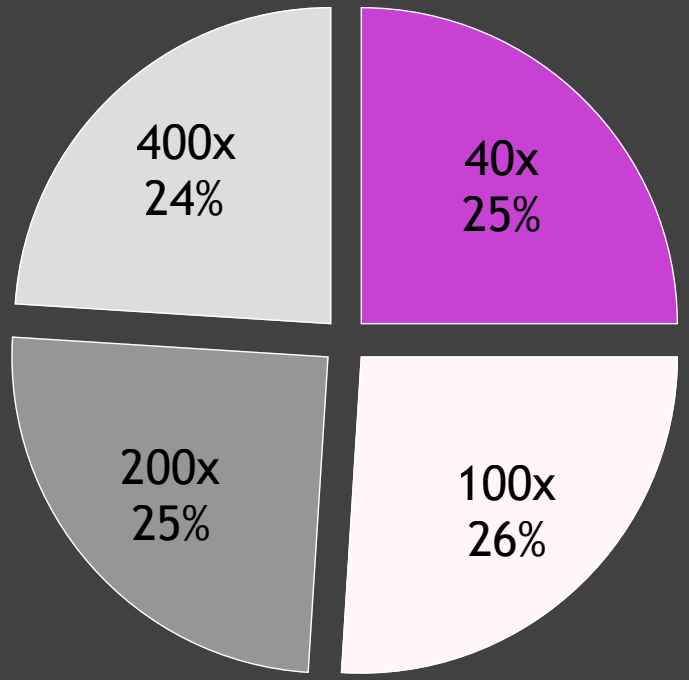
Tumour Tissue Image Classification

Bom Chavengsaksongkram
Lauren Watson
Alonso Palomino-Garibay

Breast Cancer Histopathological Image Classification (BreakHis*)

9109 Images → 700x460 px → 7909 Samples → 82 Patients





* https://web.inf.ufpr.br/vri/databases/breast-cancer-histopathological-database-breakhis/

What We Did

Baselines

Support Vector Machine

LeNet CNN

Models

GoogLeNet CNN

Inception V3 CNN

Research Questions

State-of-the-art?

Normalizing the dye?

Magnification level?

Basic augmentation?

Naïve segmentation?

Class balancing?

Is pre-processing worth further pursuing?

What Worked?

Depends on the magnification level

Augmentation

Class balancing

Naive Segmentation was promising

Validation Set Accuracy Comparison

	40x	100x	200x	400x
Spanhol et al.*	89.6% (6.5%)	85.0% (4.8%)	84.2% (1.7%)	81.6% (3.7%)
This Work	93.0% (0.5%)	86.2% (1.1%)	85.4% (0.7%)	82.1% (2.7%)

* https://web.inf.ufpr.br/vri/databases/breast-cancer-histopathological-database-breakhis/