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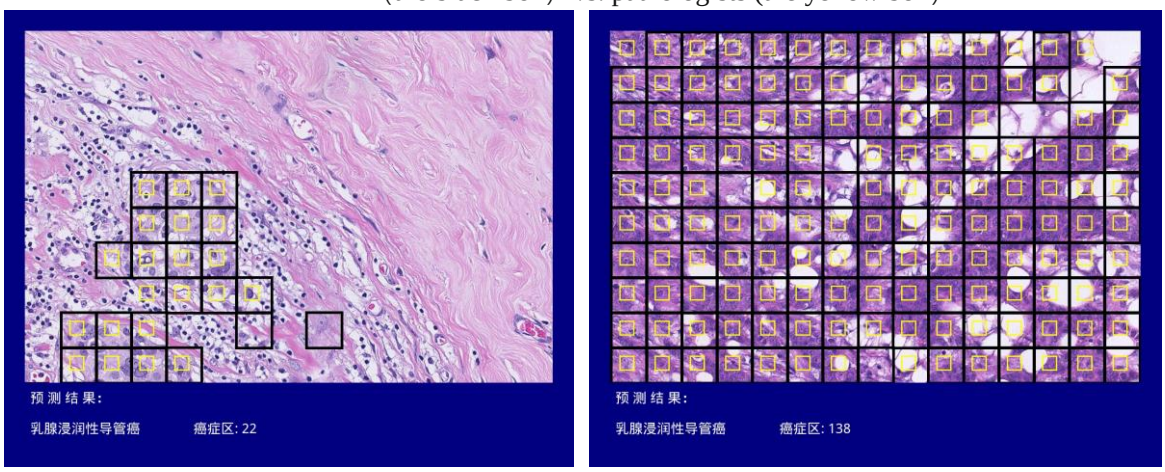


Title: Classification of Breast Cancer Histology Images Using Deep Learning

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Cancer is the second important morbidity and mortality factor among women and the most incident type is breast cancer. The diagnosis of biopsy tissue with hematoxylin and eosin (H&E) stained images is non-trivial and specialists often disagree on the final diagnosis. Actually, Computer-aided Diagnosis systems contribute to reduce the cost and increase the efficiency of this process. Therefore, we have established a diagnostic tool based on a deep-learning framework for the screening of patients with invasive ductal carcinoma. The dataset of tissue slides used in this project consists of 30,000 samples from eligible patients in our hospital. Available tissue samples above were split into a training set, for learning the CNN parameters, and test set, for evaluating its performance. An accuracy of 94% was obtained for non-cancer (i.e. normal or benign) vs. malignant (i.e. invasive carcinoma). This will be helping specialists identify cancerization which is not visible under a single microscope, and this's just the start of what we have planned.

Figures: the prediction results of 2 samples in the validation set
AI（the black box）vs. pathologists (the yellow box）



Biography

Weidong XIE is a inventor and the founder and CEO of DM Intelligence. Following graduation from Imperial College London with honor in biological medicine he took office as associate professor in Sun Yat-sen University and director/PI in St. Jude Children's Research Hospital, USA. His research results in regards to T-cell viral immunity were listed as the remarkable scientific breakthroughs by famous journals.
After a decade of experience in small molecule drugs discovery, he leads technology startups successfully and AI in medical imaging & pathology diagnosis is the key point he focuses on.

Presenting author details

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Session name: Automated image analysis software in digital pathology (track28)
Research interest: AI in diagnosis of cancer pathology, advancements in diagnosis pathology, *etc.*