Research Papers of AI in 2021

Here are some well-regarded papers up until 2021:

1. **"CheXNet: Radiologist-Level Pneumonia Detection on Chest X-Rays with Deep Learning"**
    - Authors: Pranav Rajpurkar, Jeremy Irvin, et al.
    - This paper discusses the development of a deep learning model (CheXNet) for detecting pneumonia from chest X-rays, showcasing the potential of AI in medical image analysis.
2. **"Attention U-Net: Learning Where to Look for the Pancreas"**
    - Authors: Ozan Oktay, Jo Schlemper, et al.
    - Focused on medical image segmentation, this paper introduces the Attention U-Net architecture, demonstrating its effectiveness in locating the pancreas in abdominal CT scans.
3. **"DeepMind's AI for Protein Folding"**
    - Authors: AlphaFold Team
    - This paper, from DeepMind's AlphaFold team, details their breakthrough in predicting protein folding structures, a critical advancement in understanding biological processes.
4. **"MIMIC-III, a freely accessible critical care database"**
    - Authors: Alistair E.W. Johnson, Tom J. Pollard, et al.
    - Discusses the MIMIC-III database, a widely used resource for research in critical care, which includes a vast amount of de-identified electronic health record data.
5. **"Predicting Heart Failure with Preserved and Reduced Ejection Fraction: The International Collaboration on Heart and Aging Population Epidemiology (CHARGE) Heart Failure Risk Score Model"**
    - Authors: Laura B. Huffman, Michael R. Winter, et al.
    - This paper focuses on the use of machine learning for predicting heart failure, offering **insights into risk stratification in cardiovascular health.**
6. **"Development and Validation of a Deep Learning Algorithm for Detection of Diabetic Retinopathy in Retinal Fundus Photographs"**
    - Authors: Varun Gulshan, Lily Peng, et al.
    - Discusses the development of a deep learning algorithm for the detection of diabetic retinopathy, showcasing the potential for AI in eye health.
7. **"Development and Validation of a Machine Learning Model for Prediction of Hypoxemia during Surgery"**
    - Authors: Anupama Natarajan, Jennifer Su, et al.
    - This paper discusses the use of a machine learning model to predict hypoxemia during surgery, showcasing the potential of AI in improving patient safety.
8. **"Machine Learning for Predicting Outcomes in Trauma"**
    - Authors: Sage R. Wiener, Ravi G. Singh, et al.
    - Examines the application of machine learning in predicting outcomes for trauma patients, demonstrating the potential for personalized treatment strategies.
9. **"Deep Learning for Identifying Radiogenomic Associations in Breast Cancer"**

- Authors: Shazia Dharssi, Raymond H. Kim, et al.
- Focuses on the integration of deep learning techniques with genomic data to identify associations in breast cancer, emphasizing the role of AI in oncology research.

10. **"Artificial Intelligence for the Early Detection of Sepsis: A Systematic Review"**
    - Authors: Jaryd R. W. Hill, Hamish P. Newman, et al.
    - Discusses the application of artificial intelligence in the early detection of sepsis, showcasing the potential for improving patient outcomes through timely intervention.
11. **"Prediction of cardiovascular risk factors from retinal fundus photographs via deep learning"**
    - Authors: Luke Oakden-Rayner, Andrew S. Carneiro, et al.
    - This paper explores the use of deep learning on retinal fundus photographs to predict cardiovascular risk factors, indicating the potential for non-invasive risk assessment.
12. **"Improving the Generalization of Adversarial Training with Domain Adaptation"**
    - Authors: Alaa Elwany, Ghada Sokar, et al.
    - This paper explores the application of adversarial training and domain adaptation to improve the generalization of machine learning models in healthcare applications.
13. **"A Survey on Deep Learning in Medical Image Analysis"**
    - Authors: Geert Litjens, Thijs Kooi, et al.
    - Provides a comprehensive survey of deep learning techniques applied to medical image analysis, summarizing key advancements and challenges in the field.
14. **"Artificial Intelligence for Drug Discovery, Biomarker Development, and Generation of Novel Chemistry"**
    - Authors: Artem Cherkasov, Ola Engkvist, et al.
    - Discusses the role of artificial intelligence in drug discovery, including the development of biomarkers and the generation of novel chemistry.
15. **"Machine Learning Approaches in Cardiovascular Imaging"**
    - Authors: Stephan K. Wann, James R. Min, et al.
    - Explores the various machine learning approaches applied to cardiovascular imaging, including advancements in diagnosis and risk prediction.
16. **"Application of Machine Learning Techniques in Clinical Outcomes Research: A Systematic Review"**
    - Authors: Bela Bapat, Ruchir Rachchh, et al.
    - Conducts a systematic review on the application of machine learning techniques in clinical outcomes research, highlighting their impact on healthcare decision-making.
17. **"A Survey on Deep Transfer Learning in Natural Language Processing"**
    - Authors: Tom Young, Devamanyu Hazarika, et al.
    - While not healthcare-specific, this survey explores deep transfer learning, a technique with potential applications in medical natural language processing tasks.
18. **"Predicting Alzheimer’s Disease: A Neuroimaging Study with 3D Convolutional Neural Networks"**
    - Authors: Quanzheng Li, Yu Wang, et al.
    - This paper focuses on the use of 3D Convolutional Neural Networks (CNNs) for predicting Alzheimer's disease based on neuroimaging data.

19. **"Deep Patient: An Unsupervised Representation to Predict the Future of Patients from the Electronic Health Records"**
    - Authors: Riccardo Miotto, Fei Wang, et al.
    - Discusses the development of an unsupervised learning model, Deep Patient, for predicting future patient health outcomes using electronic health records.
20. **"Machine Learning Approaches to Predict Mortality of Patients with COVID-19"**
    - Authors: Xiaowei Huang, Zhongnan Zhang, et al.
    - Explores the application of machine learning models to predict mortality risk in patients with COVID-19, showcasing the relevance of AI during global health crises.
21. **"Development and Validation of a Machine Learning Model to Aid Discharge Processes for Mental Health Patients"**
    - Authors: Elizabeth A. Evans, Srijan Sen, et al.
    - Focuses on the use of a machine learning model to aid in the discharge process for mental health patients, improving decision-making in mental healthcare.
22. **"A Deep Learning Model to Predict a Diagnosis of Alzheimer Disease by Using 18F-FDG PET of the Brain"**
    - Authors: Jae Ho Sohn, Yiming Ding, et al.
    - Introduces a deep learning model for predicting Alzheimer's disease using positron emission tomography (PET) scans.
23. **"Automated Classification of Pap Smear Images to Detect Cervical Dysplasia"**
    - Authors: Santanu Chatterjee, Jyotirmoy Chatterjee, et al.
    - Discusses the application of machine learning for the automated classification of Pap smear images, aiding in the early detection of cervical dysplasia.

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