



Education

- 2012–2017 PhD in Computer Science, IMG Lab  [Dr Mark Eramian](#) (supervisor)
University of Saskatchewan
- 2009–2012 MEng in Mechanical Engineering and Automatic Control  [Dr Weidong Liu](#) (supervisor)
Northwestern Polytechnical University
- 2005–2009 BEng in Mechanical Engineering
Hubei University of Technology

Areas of Expertise

Medical Image Analysis, Machine Learning, Deep Learning, Image Segmentation

Experience

- 2021–present Senior Software Research Engineer, Circle Cardiovascular Imaging, Calgary, Canada
○ Working on improvement of the internal machine learning pipeline
- 2019–2021 Software Research Engineer, Circle Cardiovascular Imaging, Calgary, Canada
○ Led the development of automated left atrium appendage (LAA) segmentation method for interventional planning on 3D cardiac CT
○ Led the development of automated left atrium (LA) wall segmentation method for pre-procedural planning on 3D cardiac CT
○ Led the development of coronary centerline detection and branch labeling method for coronary analysis on 3D cardiac CT
○ Developed automated chamber segmentation methods for function analysis on cardiac MRI
○ Developed automated landing zone detection method of Watchman device for interventional planning on 3D cardiac CT
- 2017–2019 Postdoctoral Fellow, University of Saskatchewan, Saskatoon, Canada
○ Conducted research in medical image analysis using deep learning under the supervision of [Dr Paul Babyn](#)
○ Developed method for low dose CT denoising using generative adversarial network
○ Explored capabilities of unsupervised and semi-supervised adversarial training in melanoma recognition
○ Developed method for catheter and tube detection on pediatric X-ray images
○ Developed method for pneumonia detection on adult chest X-ray images using ensemble learning
○ Conducted a thorough literature review of adversarial learning methods in medical image analysis
○ Conducted a thorough literature review on the current status of computer-aided evaluation of catheter and tube placement
- 2016–2017 Research Assistant, University of Saskatchewan, Saskatoon, Canada
○ Provided development support to the College of Education's internship [Placement](#) web application
○ Involved with website development, server maintenance, and technical support

- 2012–2016 Research Assistant, University of Saskatchewan, Saskatoon, Canada
- Coordinated a small journal club consisting of members from my research lab and coordinated collection of suggested paper readings, and communicated selections to the group on a weekly basis
 - Developed method for automatic weed seed species recognition in collaboration with the Canadian Food Inspection Agency (CFIA)
 - Developed method for defocus blur segmentation based on a single image
- 2014 Teaching Assistant, University of Saskatchewan, Saskatoon, Canada
- CMPT 280 - Intermediate Data Structures and Algorithms
- 2012, 13 Teaching Assistant, University of Saskatchewan, Saskatoon, Canada
- CMPT 111 - Introduction to Computer Science and Programming
 - CMPT 115 - Principles of Computer Science
- 2012 Software Development Engineer, Zhongxing Telecommunication Equipment Corporation (ZTE), Xi'an, China

Awards and Achievements

- 2021 VIP Innovation Champion (Circle Cardiovascular Imaging)
- 2021 Rank 46 out of 1305 teams (solo, top 4%) in [SIIM-FISABIO-RSNA COVID-19 Detection](#)
- 2019 Certificate of Merit (RSNA annual meeting)
- 2019 2nd place in the Scientific Research Project (CAR annual meeting)
- 2018 Rank 14 out of 1499 teams (solo, top 1%) in [RSNA Pneumonia Detection Challenge](#)
- 2015 Best Poster Award (ISTA annual meeting)
- 2014 Student Travel Award
- 2010 Excellent Student Cadre of Marine College
- 2009 Outstanding Graduate of Hubei University of Technology
- 2006, 07, 08 Elite Student Scholarship
- 2007 National Scholarship (top 3% students), by Ministry of Education of the People's Republic of China

Skills

Programming Matlab, Python (Pytorch, Tensorflow), C/C++ (OpenCV, VLFeat, Qt5), HTML/CSS/Javascript (Django), Lua (Torch), \LaTeX

Language Chinese Mandarin (native), English (fluent)

Professional Activities

Conference Reviewer for CRV 2019, MICCAI 2019/2020/2021, MIDL 2020

Journal Reviewer for MIA, TMI, TIP, JBHI, SPL

Publications

- [1] Scott J Adams, Robert DE Henderson, Xin Yi, and Paul Babyn. Artificial intelligence solutions for analysis of x-ray images. *Canadian Association of Radiologists Journal*, 72(1):60–72, 2021.
- [2] Robert DE Henderson, Xin Yi, Scott J Adams, and Paul Babyn. Automatic detection and classification of

- multiple catheters in neonatal radiographs with deep learning. *Journal of Digital Imaging*, 34(4):888–897, 2021.
- [3] Xin Yi, Scott J Adams, Robert DE Henderson, and Paul Babyn. Computer-aided assessment of catheters and tubes on radiographs: How good is artificial intelligence for assessment? *Radiology. Artificial intelligence*, 2(1), 2020.
 - [4] Xin Yi, Ekta Walia, and Paul Babyn. Generative adversarial network in medical imaging: A review. *Medical image analysis*, page 101552, 2019.
 - [5] X Yi, Scott Adams, Paul Babyn, and Abdul Elnajmi. Automatic catheter and tube detection in pediatric x-ray images using a scale-recurrent network and synthetic data. *Journal of digital imaging*, pages 1–10, 2019.
 - [6] Xin Yi, Scott Adams, Paul Babyn, and Abdul Elnajmi. Automatic catheter detection in pediatric x-ray images using a scale-recurrent network and synthetic data. *MIDL (accepted)*, 2018.
 - [7] Xin Yi and Paul Babyn. Sharpness-aware low-dose ct denoising using conditional generative adversarial network. *Journal of Digital Imaging*, Feb 2018.
 - [8] Xin Yi, Walia Ekta, and Paul Babyn. Unsupervised and semi-supervised learning with categorical generative adversarial networks assisted by wasserstein distance for dermoscopy image classification. *arXiv*, 2018.
 - [9] Xin Yi and Mark Eramian. Lbp-based segmentation of defocus blur. *IEEE Transactions on Image Processing*, 25(4):1626–1638, 2016.
 - [10] Xin Yi, Mark Eramian, Ruojing Wang, and Eric Neufeld. Identification of morphologically similar seeds using multi-kernel learning. In *Computer and Robot Vision (CRV), 2014 Canadian Conference on*, pages 143–150. IEEE, 2014.

Conference Presentations

- 2019 Radiology Society of North America annual meeting (RSNA), Chicago, Illinois (educational exhibit). *Computer-Aided Assessment of Catheters and Tubes on Radiographs: How Good is Artificial Intelligence for Assessment?*.
- 2019 Canadian Association of Radiologists annual meeting (CAR), Montréal, QC (oral). *Deep learning for automatic multi-catheter detection on pediatric radiographs*.
- 2018 International conference on Medical Imaging with Deep Learning (MIDL), Amsterdam, Netherland (poster). *Automatic catheter detection in pediatric X-ray images using a scale-recurrent network and synthetic data*.
- 2018 Canadian Association of Radiologists annual meeting (CAR), Montréal, QC (poster). *Evaluation of low-dose CT denoising on patient data using sharpness-aware conditional generative adversarial network*.
- 2017 The Scientific Conference on Machine Intelligence in Medical Imaging (C-MIMI) of the Society for Imaging Informatics in Medicine (SIIM), Baltimore, MD (oral). *Sharpness-aware Low dose CT denoising using conditional generative adversarial network*.
- 2017 The Scientific Conference on Machine Intelligence in Medical Imaging (C-MIMI) of the Society for Imaging Informatics in Medicine (SIIM), Baltimore, MD (oral). *Unsupervised and Semi-supervised learning with Categorical Generative Adversarial Networks for Dermoscopic Image Classification*.
- 2016 The International Seed Testing Association annual meeting, Tallinn, Estonia (poster). *Preliminary validation study using computer vision for seed identification*.
- 2015 The International Seed Testing Association annual meeting, Montevideo, Uruguay (poster, **first prize**). *Seed identification using computer vision techniques*.

2014 Conference on Computer and Robot Vision, Montréal, QC (oral). *Identification of morphologically similar seeds using multi-kernel learning.*