AIRIA: AI FOR RETINAL IMAGE ANALYSIS

WORKSHOP
HELD IN CONJUNCTION
WITH ACCV 2018
SUNDAY 2 DECEMBER 2018

First workshop on artificial intelligence applied to retinal image analysis

To be held in conjunction with the Asian Conference on Computer Vision 2018

Perth, Australia, Sunday December 2, 2018 (afternoon session) (WP#9, Level 2 River View Room 5)

CALL FOR PAPERS

About the workshop

Medical imaging has now embraced AI methods based on deep learning (DL) approaches for medical image analytics. This has been especially true for retinal image analysis where large annotated datasets have been available for over 10 years. Recent studies starting in 2016 have demonstrated on par with human performance for diagnostic tasks such as screening for diabetic retinopathy and macular degeneration. Recently, in 2018, the FDA approved the first software device for retinal diagnostics. The goal of this workshop is to showcase recent developments in AI for retinal image analysis and as a follow up on recent meetings at ARVO 2018 and APTOS 2018, and to bring together practitioners from different horizons that are interested in the development and application of AI and deep learning techniques to retinal imaging, including specialists from machine learning, deep learning, computer vision, ophthalmology, optometry, retinal specialists from academia and industry. While the focus of this workshop is primarily on retinal image analytics, the workshop will also address other main causes of blindness, such as cataract and glaucoma. The workshop will include invited talks as well as oral and poster submissions.

Scope and topics of interest

- AI-based automated and semi-automated diagnostics in retinal imaging including for diabetic retinopathy (DR), age-related macular degeneration (AMD), retinopathy of prematurity (ROP), ...
- analysis of other ophthalmic conditions diagnostics (cataract, glaucoma, etc..)
- fine grained severity grading
- datasets and annotations tools and techniques for deep learning
- validation methods
- deployment of AI to actual clinical scenarios and challenges
- generative methods
- adversarial methods and implications
- applications of AI to teleophthalmology
- multi-modality applications of AI: OCT, fundus, FAF, hyperspectral, etc..
- hardware and software systems and toolkits for AI-based retinal image analysis

Important dates

- **Paper submission deadline: Sept 30**
- Notification of acceptance: Oct 19
- Camera-ready deadline: Nov 2
- AIRIA workshop: Dec 2
- main conference dates: Dec 4-6

Submission

Submissions are be handled electronically via this AIRIA 2018 paper submission Website

Guidelines for paper submission

- Papers intended for preferred oral presentations to follow the same format as ACCV and a maximum of 14

pages and using LNCS format (see below) excluding pages for references

- Papers for posters presentations to follow the Lecture Notes in Computer Science format with a recommended length of 4 pages and not to exceeed maximum length of 14 pages excluding references
- Paper format should follow the guidelines for ACCV2018 paper submission including
    - Paper submission detailed instructions
    - LaTeX Templates
    - Papers which go over page limits will be not be considered
- See paper submission deadlines above

Proceedings publication

Accepted and presented papers will be published after the conference in Springer's Lecture Notes in Computer Science

Workshop registration

To have your paper included in the proceedings at least one of the authors must be registered at a full registration rate and attend the workshop.

The workshop registration is via the main ACCV 2018 conference registration pages.

Workshop organization

Philippe Burlina (JHU, APL, CS, USA)

Neil Bressler (JHU/Wilmer Eye Institute, USA)

Mingguang He (University of Melbourne, Centre for Eye Research Australia)

Lily Peng (Google Research and Verily, USA)

Gavin Tan Siew Wei (SingHealth, SEI, Singapore)

Daniel Ting Shu Wei (SingHealth /SERI, Singapore)

Tien Y Wong (SingHealth /SERI, Singapore)

Technical committee

Gregory Hager (Director, Malone Center for Engineering in Healthcare, and Dept. of Computer Science and Director, Johns Hokins University, USA)

Jerry Prince, (Professor, Dept. of Electrical Engineering, Johns Hokins University, USA)

Adrian Galdran (ISTEC, Institute for Systems and Computer Engineering, Technology and Science, Portugal, and Ecole de Technologie Superieure, CA)

Philippe Burlina (APL/CS, Johns Hopkins University, USA)

Neil Bressler (Wilmer Eye INstitute, Johns Hopkins University, USA)

Delia Cabrera DeBuc (Bascom Palmer Eye Institute. University of Miami Miller School of Medicine, USA)

Jun Kong (Department of Ophthalmology, 4th Affiliated Hospital of China Medical University, Eye Hospital of China Medical University, China)

Lily Peng (Google Research and Verily, USA)

T. Y. Alvin Liu (JHU/Wilmer Eye Institute, USA)

Neil Joshi (JHU/APL, USA)

Daniel Ting Shu Wei (SingHealth /SERI, Singapore)

Tien Y Wong (SingHealth /SERI, Singapore)

Program details

To be announced.

Featured/invited talks

Daniel Ting Shu Wei, MD, PhD, (SingHealth/SERI, Singapore), "Recent developments in AI applied to retinal imaging"

Delia Cabrera DeBuc, PhD, (Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, USA)

Yogesan Kanagasingam, PhD (The Australian Ehealth Research Center, Commonwealth Scientific and Industrial Research Organisation (CSIRO), AU)

Stuart Keel, PhD, (Centre for Eye Research Australia, University of Melbourne, AU)