ARVO EDUCATION COURSE

Saturday, May 3, 2025
8am – 5pm, MST
Salt Palace Convention Center
Salt Lake City, Utah

Artificial Intelligence for ophthalmic research

8am – 5pm

Organizers

Michael F. Chiang, MD, FARVO; Michelle Hribar, MS, PhD; Aaron Lee, MD, MSCI; Jayashree Kalpathy-Cramer, PhD; and SriniVas R. Sadda, MD, FARVO

Session 3: Fundamentals of model training and federated learning

1 – 3pm

Target audience

This is an advanced-level session. Attendees should be seeking to create AI models themselves and be familiar with basic programming skills.

Description

This session will introduce the basics of programming models as well as how to build an AI ready dataset. Students will also learn the basics of federated learning—an approach to building AI models from multisite data where the data can stay local to each site.

Learning objectives

Attendees will leave this session with the ability to:

- Describe the different types of models
- List tools and libraries available for model training
- Describe FAIR and AI-ready data
- Explain federated learning

Session agenda

Time	Topic	Presenter
1 – 1:05pm	Welcome and introductions	**Session moderator** Michelle Hribar, MS, PhD Assistant Professor of Medical Informatics and Clinical Epidemiology OHSU Portland, Oregon
1:05 – 1:25pm	Nuts and bolts of training	Aaron Y. Lee, MD, MSCI Professor, C. Dan and Irene Hunter Endowed Professor University of Washington Seattle, Washington

1:25 – 1:45pm	How to train your own model?	Hrvoje Bogunovic, PhD Assistant Professor, Medical University of Vienna Director of Christian Doppler Lab for Artificial Intelligence in Retina Vienna, Austria
1:45 – 2:05pm	What is FAIR and AI-Ready for datasets?	Bhavesh Patel, PhD Associate Research Professor California Medical Innovations Institute San Diego, California
2:05 – 2:25pm	Federated learning	Ravi K. Madduri, MS Senior Computer Scientist Argonne National Laboratory Lemont, Illinois
2:25 – 2:45	AI-READI	Cecilia S. Lee, MD, MS Professor, Klorfine Family Endowed Chair Director of Clinical Research University of Washington Seattle, Washington
2:25 – 2:55pm	Q&A	
2:55 – 3pm	Session wrap-up	