2024 Translating Data Science to Neurosurgical Practice: From Computer Screen to Bedside

Saturday, June 8, 2024
Zoom

Course Description
This course will provide neurosurgeons, junior academic faculty, and residents with a framework for answering neurosurgical questions using data science models and translating these models into clinical practice. The course aims to help clinicians understand how to incorporate data science models into their clinical practice and to critically evaluate models for their transparency, reliability, and efficacy.

Learning Objectives
Upon completion of this course, participants will be able to:
1. Identify and describe data science models that can address neurosurgical clinical questions
2. Evaluate the pathway from inception to clinical deployment of a data science model in neurosurgical practice
3. Critically analyze neurosurgical data science models for their transparency, reliability, and efficacy

ACCME Accreditation Statement
The Congress of Neurological Surgeons is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA Credit Designation Statement
The Congress of Neurological Surgeons designates this [activity format] for a maximum of 6.50 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Reviewers:
Tiffany Hodges          Akash Patel

Planners:
Natasha Ironside       Eric Oermann       Lauren Stone

Faculty:
Todd Hollon            Shinjini Kundu      Jiachang Liu      Gustavo Rohde
TBD                    TBD                    TBD
AGENDA

All times are in Central Time

Saturday, June 8

9:00–9:15 am  Welcome and introduction, Natasha Ironside and Lauren Stone
9:15–10:00 am  Writing a Data Science Question for the Neurosurgical Setting, Todd Hollon
10:00–10:45 am  Designing Interpretable Machine Learning Models - Decomposing Black Box Methods, Jiachang Liu
10:45–11:00 am  Break
11:00–11:45 am  Alternatives to Convolutional Neural Networks for Signal and Image Processing, Shinjini Kundu and Gustavo Rohde
11:45–12:30 pm  Curating Big Datasets for Use in Neurosurgical Data Science Search, TBD
12:30–12:45 pm  Break
12:45–1:30 pm  Assessing Safety and Efficacy of Data Science Models in the Clinical Environment, TBD
1:30–2:15 pm  Transition to Market: Deploying Data Science Models into Neurosurgical Practice, TBD
2:15–2:30 pm  Break
2:30–3:45 pm  Data Science Workshop
3:45–4:00 pm  Conclusion, Natasha Ironside and Lauren Stone