

# 1st World Conference of Computational Neurosurgery

13-15 February 2026  
Sydney, Australia | Hyatt Regency Sydney

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## Day 2

14 February 2026

07.00-08.00 am Registrations

### Opening

Time	Duration	Speaker	Talk	Country
08:00	0:10	Antonio Di Ieva	Welcome and Introduction to Prof. Paxinos' Keynote	
08:10	0:20	George Paxinos	Brain Cartography: The Congruence of Histology and DTI	

### Computational Neurosurgery in Cerebrovascular Surgery

Chair: Prof. Marcus Stoodley

Time	Duration	Speaker	Talk	Country
8:35	0:05	Antonio Di Ieva	Introduction to Dr. Lawton's Keynote	
8:40	0:20	Michael Lawton (online)	Keynote: Seven Cavernomas: Taxonomy, Cartography, and the Mind	
9:00	0:05	Antonio Di Ieva	Introduction to Prof. Regli's Keynote	
9:05	0:20	Luca Regli	Keynote: PRAEMIUM: Prediction Modeling for Adverse Events after Microsurgery for Unruptured Intracranial Aneurysms	Switzerland
9:25	0:10	Alberto Feletti	Computational Fluid Dynamics Analysis and Correlation with Intraoperative Aneurysm Features - Personal Series and Review of the Current Literature	Italy

9:35-10:05 Morning Break

Time	Duration	Speaker	Talk	Country
10:05	0:05	Antonio Di Ieva	Introduction to Dr. Staartjes' Keynote	
10:10	0:20	Victor Staartjes	Keynote: Building a Machine Intelligence Laboratory as an Early-career Researcher	Switzerland/ Sweden

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## Computational Neurosurgery in Functional Neurosurgery

Chair: Dr. Joseph Yang

Time	Duration	Speaker	Talk	Country
10:35	0:10	Joseph Yang	Advanced White Matter Imaging and Computational Analysis in Epilepsy Surgery	Australia
10:45	0:10	Ghasem Azemi	Computational Analysis of Connectomics Re-arrangement Following Spinal Cord Stimulation in Patients with Chronic Pain	Australia

## Computational Neurosurgery in Cerebrospinal Fluid Dynamics and Disturbances

Chair: Prof. Lynne Bilston, Prof. Marcus Stoodley

Time	Duration	Speaker	Talk	Country
11:00	0:10	Robert Lloyd	Automating the analysis of real-time CSF flow imaging to understand Chiari malformation	Australia
11:10	0:10	Lynne Bilston	Computational Modelling in CSF Dynamics	Australia

## Computational Neurosurgery in Traumatic Brain Injury and Intensive Care Unit care

Chair: Prof. Jeffrey Rosenfeld

Time	Duration	Speaker	Talk	Country
11:25	0:10	Paul Naser	PREDICT-ICU: Preoperative Risk Evaluation for Decision-making in Intensive Care Transfers Following Intracranial Surgery	Germany
11:35	0:10	Deepak Agrawal	ML-Enhanced Hybrid Physiological Modeling for Personalized Optimization of Mechanical Ventilation in Neurosurgery Patients	India
11:45	0:10	Ahmed Shaheen	Mapping Causal Pathways from Traumatic Brain Injury to Dementia: A Systematic Synthesis with Computational Inference	Egypt

## Computational Neurosurgery in Pediatric Neurosurgery

Chairs: Dr. Jennifer Quon and Dr. Amin Tavallaii

Time	Duration	Speaker	Talk	Country
11:55	0:10	Jennifer Quon	AI in Pediatric Neurosurgery	Canada
12:05	0:10	Amin Tavallaii	Development of a Machine Learning Model for Prediction of Intraventricular Hemorrhage in Premature Neonates	Iran/Australia

12:15 - 13:00 LUNCH BREAK

## Computational Neurosurgery in the Neuroanatomy, Neuronavigation, and Neurosurgical Education

Prof. Yinyan Wang, Prof. Federico Nicolosi

Time	Duration	Speaker	Talk	Country
13:00	0:05	Antonio Di Ieva	Introduction to Prof. Salvado's Keynote	
13:05	0:20	Olivier Salvado	Keynote: How can AI Model Neuroanatomy?	Australia
13:25	0:10	Shun Yao	Integrating AI into Neurosurgery: From Technique to Clinical Practice	China
13:35	0:10	Francesco Carbone	Photogrammetry and Videogrammetry for Anatomy Learning and Surgical Planning - Pipeline for Neurosurgical Training in Virtual Reality	Italy

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## Computational Neurosurgery in the Neuroanatomy, Neuronavigation, and Neurosurgical Education

Prof. Yinyan Wang, Prof. Federico Nicolosi

Time	Duration	Speaker	Talk	Country
13:45	0:10	Frederick Van Gestel	The Next Evolution of Neuronavigation: Augmented Reality as a Game-changer in Neurosurgery	Belgium
13:55	0:10	Shrey Shah	Deep Learning Methods for Hippocampal Segmentation	India
14:05	0:10	Federico Nicolosi	Cutting-edge Neurosurgery: Certification of Surgical Skills with AI and Advanced Simulation	Italy

## Computational Neurosurgery in Spine Surgery and Robotics

Chair: Dr. Ralph Mobbs, Dr. Mirza Pijskic

Time	Duration	Speaker	Talk	Country
14:20	0:10	Ralph Mobbs	Generative AI in Spine Care	Australia
14:30	0:10	Mirza Pojskic	The Role of AI and Deep Learning in Robotics in Spinal Surgery	Germany
14:40	0:10	James Elliott	The (Muscle) Map behind the automatic segmentation of paraspinal muscles	Australia
14:50	0:10	Martin Gehrchen	Long-term Trajectories and Machine Learning Algorithms in Spine Surgery	Denmark

15:00 – 15:30

AFTERNOON BREAK

## Computational Neurosurgery in Intraoperative Neuromonitoring and Mapping

Chair: Dr. Alessandro Boaro, Victor Staartjes

Time	Duration	Speaker	Talk	Country
15:30	0:10	Alessandro Boaro	Artificial Intelligence in Intraoperative Neuromonitoring - The Missing Link	Italy
15:40	0:10	Maximilian Schwendner	Advanced Technologies for Advanced Intraoperative Mapping	Germany

## Symposium 1: Computational Fractal-based Analysis in the Clinical Neurosciences

Chairs: Prof. Branka Spehar, Prof. Antonio Di Ieva

Time	Duration	Speaker	Talk	Country
16:00	0:10	Antonio Di Ieva	Introduction to the Fractal Symposium	Australia
16:10	0:10	Branka Spehar	Fractal Fluency: Processing of Fractal Stimuli Across Sight, Sound, and Touch	Australia
16:20	0:10	Millijoy Dennise Villanueva	Fractal-based Radiomics of Glioblastoma Microscopy Images	Australia
16:30	0:10	Guillermo Axayacalt Gutierrez Aceves	Fractal Anatomy of the Hippocampus	Mexico
16:40	0:10	Robert Newport	Fractals as a Bridge Between Human Vision and Neuromorphic Computing	Australia
16:50	0:10	Brandon Munn	Multiscale Organization of Neuronal Activity Unifies Scale-dependent Theories of Brain Function	Australia

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## Symposium 2 – Nuts & Bolts of AI in Neurosurgery (Theoretical and Practical Session)

Chair: Prof. Benoit Liquet

Time	Duration	Speaker	Talk	Country
14:00	1:00	Benoit Liquet	Overview of the Fundamentals of Deep Learning Models	France

15:00 – 15:30 AFTERNOON BREAK

Time	Duration	Speaker	Talk	Country
15:30	1:30	Benoit Liquet, Ghasem Azemi, Robert Lloyd, Eric Suero Molina	Practical Workflow: Loading and Reading Neuroimaging Data, Radiomics Feature Extraction, Preprocessing Steps Introduction to Computational Fractal-based Analysis in Neuroscience Illustrative Notebook - From Features to Decision Support Illustrative Notebook - From Features to Decision Support	

18:30–22:30 Sydney Harbour Cruise with Best Young Presenters' Awards