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Ufficio:

Istituto di Neurochirurgia
Dipartimento di Neuroscienze, Biomedicina
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Università di Verona
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Verona 37134, Italia
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POSIZIONI CORRENTI

Ospedale Borgo Trento - Università di Verona
Neurochirurgo

Verona, IT
10/2020 - Presente

**Dipartimento di Neuroscienze, Biomedicina e Scienze del Movimento -
Università di Verona**
Dottorando

Verona, IT
10/2020 - Presente

POSIZIONI PASSATE

Brigham and Women's Hospital – Harvard University
Clinical Fellow in Spinal Neurosurgery

Boston, MA
07/2019 - 07/2020

Computational Neuroscience Outcomes Center – Harvard University
Research Fellow in Neurosurgery

Boston, MA
06/2017 – 07/2020

FORMAZIONE

Università degli Studi di Padova
Specializzazione in Neurochirurgia

Padova, IT
08/2013 – 09/2018

***Tesi:** The Effect of Spine Surgery on Patient Mobility. A Digital Phenotyping Pilot Study
Using the Smartphone Integrated GPS*

Scuola di Medicina e Chirurgia - Università degli Studi di Padova
Laurea in Medicina, *magna cum laude*

Padova, IT
10/2006 – 10/2012

***Tesi:** Circumventricular organs visualization in neuro-endoscopic fluorescein angiography*

Diploma di Scuola Superiore
Liceo Scientifico – Piano Nazionale Informatica

Bassano del Grappa, IT
2001-2006



INTERNSHIP CLINICHE

Dipartimento di Chirurgia Vertebrale – Patologia Oncologica e Degenerativa Istituto Ortopedico Rizzoli (IOR)	Bologna, IT 04/2017
Dipartimento di Neurochirurgia, Toronto Western Hospital	Toronto, CA 09/2014
Dipartimento di Ortopedia, Ospedale Sant'Antonio	Padova, IT 2012
Dipartimento di Neurochirurgia, Ospedale Universitario di Padova	Padova, IT 2011
Dipartimento di Ginecologia, Ospedale Universitario di Padova	Padova, IT 2011
Dipartimento di Cardiocirurgia, Ospedale Universitario di Padova	Padova, IT 2010
Dipartimento di Chirurgia Toracica, Ospedale Universitario di Padova	Padova, IT 2010
Dipartimento di Immunologia, Ospedale Universitario di Padova	Padova, IT 2009

CORSI DI FORMAZIONE

European Training Course in Neurosurgery: Trauma and Functional session	Brno, CR 09/2019
4th New England Master Class in Endoscopic Anterior Skull Base Surgery	Boston, MA 05/2019
Using Python for Research. Harvard X Course	Boston, MA 03/2019
European Training Course in Neurosurgery: Tumor session	Dubrovnik, HR 10/2018
Cadaver Lab in Neurotrauma: Decompressive craniectomy and Cervical spine instability	Parma, IT 03/2017
XXIX National Theoretical and Practical Course for Young Neurosurgeons	Rome, IT 2015
Cerebral and Ventricular Endoscopy Theoretical and Practical Course	Napoli, IT 2014
Pediatric Basic Life Support Course	Padova, IT 2011
Red Cross Pre-Hospital Emergency Care Course 2009 – 2011 Volunteer in the Red Cross Pre-Hospital Emergency Care Service	Padova, IT 2009

CERTIFICAZIONI

Massachusetts Medical License, Limited	07/2019
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Educational Commission for Foreign Medical Graduates (ECFMG) Certification	03/2019
USMLE Step II	01/2019
Abilitazione Italiana in Neurochirurgia	09/2018
USMLE Step I	12/2017

PRESENTAZIONI ORALI e POSTER

'An Online Brain Meningioma Database For Deep Learning Image Analysis' **Boston, MA**
Accepted - Poster at the American Association of Neurological Surgery (AANS) Annual meeting
2020 April 25-29, 2020

'Butterfly Glioblastoma - Survival Outcomes In The Contemporary Era' **Boston, MA**
Accepted - Poster at the American Association of Neurological Surgery (AANS) Annual meeting
2020 April 25-29, 2020

'A deep learning algorithm for the automatic segmentation of meningiomas on magnetic resonance imaging' **San Francisco, CA**
2019
Poster at the Congress of Neurological Surgery (CNS) Annual Congress
October 19 - 23, 2019

'The Effect of Spine Surgery on Patient Mobility. A Digital Phenotyping Pilot Study Using the Smartphone Integrated GPS' **Boston, MA**
2019
Poster Presentation at 2019 Computational Neurosciences Outcomes Center Symposium
October 9th 2019

'Natural Language Processing of Clinical Documentation in Patients Undergoing Surgical Intervention for Lumbar Stenosis' **Boston, MA**
2019
Poster Presentation at 2019 Computational Neurosciences Outcomes Center Symposium
October 9th 2019

'A deep learning algorithm for the automatic segmentation of meningiomas on magnetic resonance imaging' **Boston, MA**
2019
Oral Presentation at 2019 Computational Neurosciences Outcomes Center Symposium
October 9th 2019

'A deep learning algorithm for the automatic segmentation of meningiomas on magnetic resonance imaging' **Dublin, IR**
2019
Oral Presentation at 2019 European Association of Neurosurgical Societies Annual Meeting, September 24 - 28, 2019

'The Effect of Spine Surgery on Patient Mobility. A Digital Phenotyping Pilot Study Using the Smartphone Integrated GPS' **San Diego, CA**
2019



Poster at the American Association of Neurological Surgery (AANS) Annual meeting
13-17 April

'Thirty-day Complications after Surgery for Spinal Metastasis in the Neurosurgical Practice: A National Surgical Quality Improvement Program Analysis' **Houston, TX**
2018

Poster at the Congress of Neurological Surgery (CNS) Annual Congress,
6-10 October 2018

'Thirty-day Complications after Surgery for Spinal Metastasis in the Neurosurgical Practice: A National Surgical Quality Improvement Program Analysis' **Chatham, MA**
2018

Poster at the New England Neurosurgical Society (NENS) Annual Congress,
28-30 June 2018

'Intracranial hypertension and osteoblastoma of the temporal bone. A case report' **Vicenza, IT**
Oral presentation at the Italian Neurosurgery Society National Congress,
25-27 Sept 2014

'Giant esophageal hemangioma. A case report' **Padova, IT**
presented at the General Surgery Course,
Medical School, University of Padova
2011

Presentazioni su invito:

2019 *'Deep learning MRI analysis and meningiomas: What we need and why we need it'*,
Neurosurgery Research Talk Series, Brigham and Women's Hospital

PREMI

2019 Award for Best Computational Radiomics Abstract, 2019 Computational Neurosciences
Outcomes Center Symposium

2018 Excellence in Innovation, Partner Healthcare Innovation

2012 Cum Laude, University of Padova Medical School

PUBBLICAZIONI

A. Boaro, J. Leung, H.T. Reeder, F. Siddi, E. Mezzalana, G. Liu, R.A. Mekary, Y. Lu, M. Groff, J.P. Onnela, T.R. Smith: Smartphone GPS signatures of patients undergoing spine surgery correlate with mobility and current gold standard outcome measures. Accepted for publication *Journal of Neurosurgery: Spine*, February 2021

A. Boaro, M. Wells, J. Chi, Y. Lu, T.R. Smith, M.W. Groff, H. Zaidi. A National Surgical Quality Improvement Program Analysis of Postoperative Major and Minor Complications in Patients with Spinal Metastatic Disease, *World Neurosurgery*, 140: e203-e211, 2020



M Mammi, **A. Boaro**, V. Kavouridis, A F.C. Hulsbergen, J T. Senders, WB. Gormley, TR. Smith, O Arnaout, Chapter 9 - Artificial intelligence for management of patients with intracranial neoplasms, Editor(s): Debmalya Barh, *Artificial Intelligence in Precision Health*, Academic Press, 203-230, 2020

F. Coluzzi, J. V. Pergolizzi Jr, E. Giordan, P. Locarini, **A. Boaro**, D. Billeci. Tapentadol prolonged release for managing moderate to severe chronic neck pain with or without a neuropathic component, *Current Medical Research and Opinion*, 36:4, 651-659, 2020 DOI: 10.1080/03007995.2020.1722083

P Calvachi, E Mezzalana, **A Boaro**, A Duey, F Bolivar, R Mekary, T R Smith, L Aglio, W Gormley, The opioid crisis: 18 years of opioid prescriptions in spine patients, *European Journal of Public Health*, Volume 30, Issue Supplement_5, September 2020, ckaa165.1144, <https://doi.org/10.1093/eurpub/ckaa165.1144>

Boaro A, Harary M, Chukwueke U, Quevedo PV, Smith TR. The neurocognitive evaluation in the butterfly glioma patient. A systematic review. *Interdisciplinary Neurosurgery*, Volume 18, December 2019, 100512

Kavouridis VK, **Boaro A**, Dorr J, Cho EY, Iorgulescu JB, Reardon DA, Arnaout O, Smith TR. Contemporary assessment of extent of resection in molecularly defined categories of diffuse low-grade glioma: a volumetric analysis. *J Neurosurg*. 2019 Oct 25:1-11. doi: 10.3171/2019.6.JNS19972. [Epub ahead of print]

Chang K, Beers AL, Bai HX, Brown JM, Ly KI, Li X, Senders JT, Kavouridis VK, **Boaro A**, Su C, Bi WL, Rapalino O, Liao W, Shen Q, Zhou H, Xiao B, Wang Y, Zhang PJ, Pinho MC, Wen PY, Batchelor TT, Boxerman JL, Arnaout O, Rosen BR, Gerstner ER, Yang L, Huang RY, Kalpathy-Cramer J. Automatic assessment of glioma burden: a deep learning algorithm for fully automated volumetric and bidimensional measurement. *Neuro Oncol*. 2019 Nov 4;21(11):1412-1422. doi: 10.1093/neuonc/noz106.

Zhou H, Chang K, Bai HX, Xiao B, Su C, Bi WL, Zhang PJ, Senders JT, Vallières M, Kavouridis VK, **Boaro A**, Arnaout O, Yang L, Huang RY. Machine learning reveals multimodal MRI patterns predictive of isocitrate dehydrogenase and 1p/19q status in diffuse low- and high-grade gliomas. *J Neurooncol*. 2019 doi: 10.1007/s11060-019-03096-0. [Epub ahead of print]

Chang K, Bai HX, Zhou H, Su C, Bi WL, Agbodza E, Kavouridis VK, Senders JT, **Boaro A**, Beers A, Zhang B, Capellini A, Liao W, Shen Q, Li X, Xiao B, Cryan J, Ramkissoon S, Ramkissoon L, Ligon K, Wen PY, Bindra RS, Woo J, Arnaout O, Gerstner ER, Zhang PJ, Rosen BR, Yang L, Huang RY, Kalpathy-Cramer J. Residual Convolutional Neural Network for the Determination of IDH Status in Low- and High-Grade Gliomas from MR Imaging. *Clin Cancer Res*. 2018 Mar 1;24(5):1073-1081

Longatti P, **Boaro A**, Canova G, Fiorindi A. The subependymal microvascular network revealed by endoscopic fluorescence angiography. *J Neurosurg Sci*. 2018 Mar 1;24(5):1073-1081

Boaro A, Marton E, Mazzucco GM, Longatti P. Osteoblastoma Mimicking an Idiopathic Intracranial Hypertension Syndrome. *Pediatr Neurosci*. 2017 12(1):87-90.

Canova G, **Boaro A**, Giordan E, Longatti P Treatment of Posttubercular Syringomyelia Not Responsive to Antitubercular Therapy: Case Report and Review of Literature. *J Neurol Surg Rep*. 2017 78(2): e59-e67.



Fiorindi A, **Boaro A**, Del Moro G, Longatti P Fluorescein-Guided Neuroendoscopy for Intraventricular Lesions: A Case Series Operative Neurosurgery, 2017 Volume 13(2):173-181

Fiorindi A, Giofrè G, **Boaro A**, Billeci D, Frascaroli D, Sonogo M, Longatti P. Banked fascia lata in sellar dura reconstruction after endoscopic transsphenoidal skull base surgery. Journal of Neurological Surgery Part B_Skull Base 2015, 76(4):303-309

Longatti P, Basaldella L, Sammartino F, **Boaro A**, Fiorindi A. Fluorescein-enhanced characterization of additional anatomical landmarks in cerebral ventricular endoscopy. Neurosurgery 2013, 72(5):855-860

ATTIVITÀ EDITORIALI

World Neurosurgery

ALTRE ESPERIENZE

- 2020 Massachusetts Institute of Technology (MIT) 2020 Reality Hack.
Progetto: *Augmented Reality Guided Brain Tumor Biopsy System for Microsoft HoloLens 2* - Demo Video: <https://devpost.com/software/clear-biopsy-guidance>
- 2019 Membro del Comitato di Tesi al Master of Science in Pharmaceutical Economics & Policy at Massachusetts College of Pharmacy and Health Sciences

PROGETTI SOTTOMESSI PER FINANZIAMENTO

- 2020 Titolo: SMARTphone as monitoring and early intervention system in BRain Oncology - SMART BRO
Grant: Horizon 2020 - European Commission Funding Program
Ruolo: Co-Investigator
- 2020 Titolo: BeiweD-U: a smartphone-based, follow-up and early interventional tool for brain tumor patients
Grant: R01 - National Institute of Health
Ruolo: Co-Investigator
- 2019 Titolo: Augmented Reality Navigation System in Spine Surgery
Grant: Partners Innovation Discovery Grant
Ruolo: Co-Investigator
- 2019 Titolo: Digital-Phenotyping Assessment in Neuro-Oncology in GBM: DANO
Grant: Horizon 2020 - European Commission Funding Program
Ruolo: Co-Investigator
- 2018 Titolo: The Use of Neural Network Machine Learning for Meningioma Detection and Segmentation
Grant: Partners Innovation Discovery Grant
Ruolo: Senior Investigator

ASSOCIAZIONI PROFESSIONALI



Società Italiana di Neurochirurgia

European Association of Neurosurgical Societies

American Association of Neurological Surgeons

North American Spine Society