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Dr. Matheus Machado Rech



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M.D.

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 Caxias do Sul, RS, Brazil


Languages

 English
Proficient

 Spanish
Proficient

 Portuguese
Native

Professional ID

 ORCID

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Academic Background

Education

Doctor of Medicine (M.D.) University of Caxias
do Sul Caxias do Sul, Brazil 2018 - 2024

Research Experience

**Scientific Initiation Scholarship
Program** University of Caxias do Sul Funded by the
National Council for Scientific and Technological
Development (CNPq) April 2020 - March 2023

Research Focus & Achievements

A federally funded national research fellowship focused on healthcare innovation and clinical outcomes prediction.



AI/ML Models

Engineered and validated AI/ML models to predict patient outcomes in complex clinical



Data Pipelines

Constructed robust Python/Matlab data pipelines to simulate uncertainty in healthcare systems



Novel Approaches

Investigated novel machine learning approaches for predicting patient-specific variability



Technical Reports

Authored technical reports and presented findings to faculty and the national funding agency



Professional Experience

Teaching Experience

Neurology / Neuropsychiatry (2022)

60 hours

Competitive exam

Supervisor: Marcelo Mattana, MD

Delivered additional lectures and assistance to junior medical students

Surgical Technique & Anesthesia (2020)

60 hours

Competitive exam

Supervisor: Marcos Dalponte, MD

Assisted with skills-focused teaching and supplemental lectures

Human Anatomy (Morphology) (2020)

60 hours

Competitive exam

Supervisor: Fabio Pasqualoto, MD, PhD

Delivered additional lectures and assistance to health-sciences students

Biophysiology (2020)

30 hours

Competitive exam

Supervisor: Rafael Colombo, PhD

Delivered additional lectures and assistance to health-sciences students

Neuroanatomy (2019-2020)

Competitive exam

Supervisor: Asdrubal Falavigna, MD, PhD

Delivered additional lectures and provided assistance to junior medical and other health-sciences students

Neurophysiology (2019)

30 hours

Competitive exam

Supervisor: Asdrubal Falavigna, MD, PhD

Delivered additional lectures and assistance to junior medical students

Leadership & Professional Activities



Director of Medical Education Affairs

Brazilian Association of Medical Students

Brazil • 2022-2023



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Continuing Education



Principles and Practice of Clinical Research (PPCR)

Harvard T.H. Chan School of Public Health · Boston, MA

9-month postgraduate program providing expertise in biostatistics, epidemiology, and clinical trial design.



Continuing Education Program in Research

AO Spine Latin America

Intensive training in evidence-based practice, literature search, database management, and manuscript writing.



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Service & Activities




Course & Event Organization

-  **Mayo Clinic School of Continuous Professional Development**
Staff, Rhoton-de Oliveira Skull Base Lab Course • Jacksonville, FL • March 2023

Voluntary Work

-  **Vine Trust – "Amazon Hope" Medical Program**
Volunteer Medical Student • Loreto Region, Peru • January–February 2023

Committee Service

-  **Student Representative, Medical School Council**
University of Caxias do Sul • 2023
-  **Elected Member, Fiscal Council**
Gaucha Association of History of Medicine, Porto Alegre • 2020–2024
-  **Elected Student Delegate, National Assembly**
Brazilian Association of Medical Education, Brasília • 2020



Honors & Awards



First Place, Secondary Research: Gynecology
Brazilian Congress of Gynecology and Obstetrics
Rio de Janeiro, Brazil

2025



Honorable Mention, Machine Learning Algorithm
UCS Young Researchers Meeting
Caxias do Sul, Brazil

2021



Special Prize (Honorable Mention), BRICS International School
Contest for BRICS Young Leaders
Moscow, Russia

2020



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Peer-Reviewed Articles

Peer-Reviewed Articles



Machine learning models to forecast outcomes of pituitary surgery: systematic review

Brain Sciences

2023

Rech MM, de Macedo Filho L, White AJ, et al. Machine learning models to forecast outcomes of pituitary surgery: systematic review....



Publication trends of intrathecal baclofen therapy: bibliometric analysis

World Neurosurgery

2024

Rech MM, Ramos MB, Piva FE, et al. Publication trends of intrathecal baclofen therapy: bibliometric analysis. World Neurosurgery....



Development and validation of a machine learning model to predict mortality in cirrhosis with esophageal variceal bleeding

World Journal of Hepatology

2025

Rech MM, Corso LL, Dal Bó EF, et al. Development and validation of a machine learning model to predict mortality in cirrhosis with...



Author Impact Factor as a metric in neurosurgery

World Neurosurgery

2022

Ramos MB, Rech MM, Dagostini CM, Britz JPE, Teixeira MJ, Figueiredo EG. Author Impact Factor as a metric in neurosurgery. World...



Predicting major adverse cardiovascular events after liver transplantation using supervised machine learning

World Journal of Hepatology

2024

Soldera J, Corso LL, Rech MM, et al. Predicting major adverse cardiovascular events after liver transplantation using supervised...



Emergency neurological life support in literature: bibliometric study

Arquivos de Neuro-Psiquiatria

2024

Ramos MB, Rech MM, Telles JPM, Moraes WM, Teixeira MJ, Figueiredo EG. Emergency neurological life support in literature: bibliometric...



Abstracts & Presentations



Interpretable Machine Learning Algorithms Applied to Outcome Prediction in Spine Surgery

XXXI Young Researchers Meeting • Caxias do Sul, Brazil

2023

Oral Presentation



Publication Trends of Research on Intrathecal Baclofen Therapy

XXXIV Brazilian Congress of Neurosurgery • São Paulo, Brazil

2023

Poster



Prospective Validation of a Neural Network Model for the Prediction of 1-Year Mortality in Cirrhotic Patients

Digestive Disease Week (AASLD/AGA) • Chicago, IL

2023

Oral Presentation



Predicting Post-Liver Transplantation Major Adverse Cardiovascular Events Using a Machine Learning Algorithm

Digestive Disease Week (AASLD/AGA) • Chicago, IL

2023

Oral Presentation



Knowledge, Attitudes and Behaviors Regarding the Use of Clinical Practice Guidelines Among Spine Surgeons in Latin America

2022



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