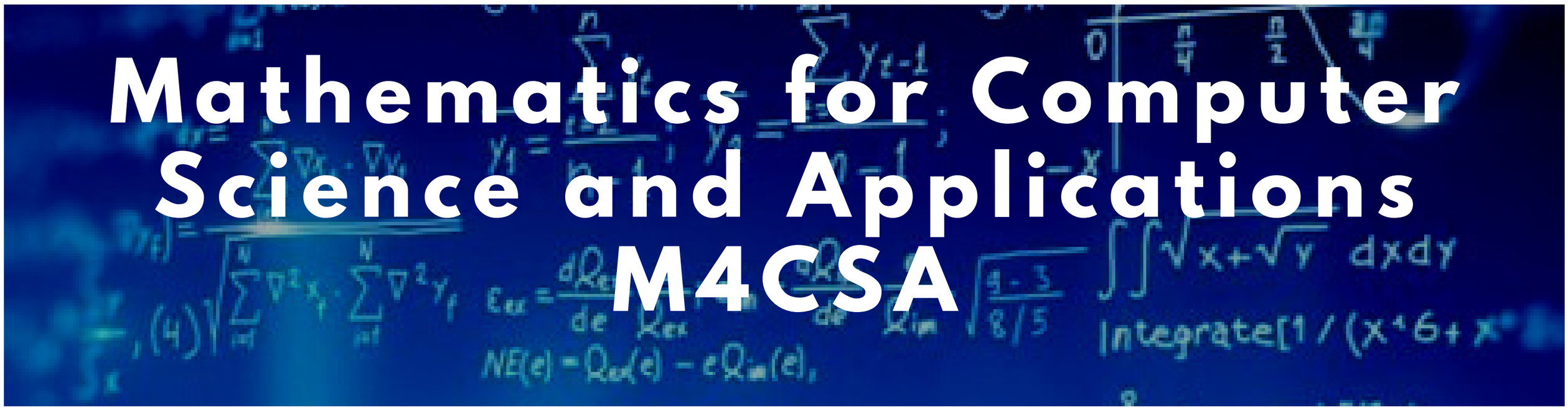


Mathematics for Computer Science and Applications M4CSA

Online Seminar

http://ii.pk.edu.pl/~m4csa/

Tuesday, April 5, 2022
Tuesday, May 17, 2022
11:30 CEST(GMT+2)

Join Zoom Meeting

https://zoom.us/j/94722402566

Meeting ID: 947 2240 2566
Passcode: 456787

Any questions regarding the seminar can be directed to niemaga@matman.uwm.edu.pl and radoslaw.kycia@gmail.com

Cracow University of Technology

UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Mathematics for Computer Science and Applications M4CSA

Seminar Topic:

Boundary value problem, Hilbert formulas and related topics

Baruch Schneider

University of Ostrava

In this talk, we discuss the some problems for a first order linear partial differential equations all of which solutions are harmonic functions.

Tuesday, April 5, 2022, 11:30 CEST(GMT+2)
Join Zoom Meeting: https://zoom.us/j/94722402566
Meeting ID: 947 2240 2566, Passcode: 456787

Cracow University of Technology

UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Mathematics for Computer Science and Applications M4CSA

Seminar Topic:

Diamond Derivative of Interval-Valued Functions on Time Scales under Generalized Hukuhara Difference and Its Applications

Tri Troung

University of Ostrava

A "time scale" is a nonempty closed subset of the real line (e.g., the sets of integers, rational or real numbers, or Cantor sets). It is characterized by the backward and forward jump operators representing the steps from a point in it to its left and right nearest points, respectively. In this talk, we propose the diamond-τ derivative for interval-valued functions on time scales via the generalized Hukuhara difference. We first focus on the definition and essential properties of the diamond-τ derivative that are naturally investigated based on the limit of interval-valued functions on time scales. With the help of the proposed derivative, we consider the interval differential equations on time scales. Some numerical examples are provided to illustrate the necessity and efficiency of the new concept in these problems

Tuesday, April 5, 2022, 12:15 CEST(GMT+2)
Join Zoom Meeting: https://zoom.us/j/94722402566
Meeting ID: 947 2240 2566, Passcode: 456787

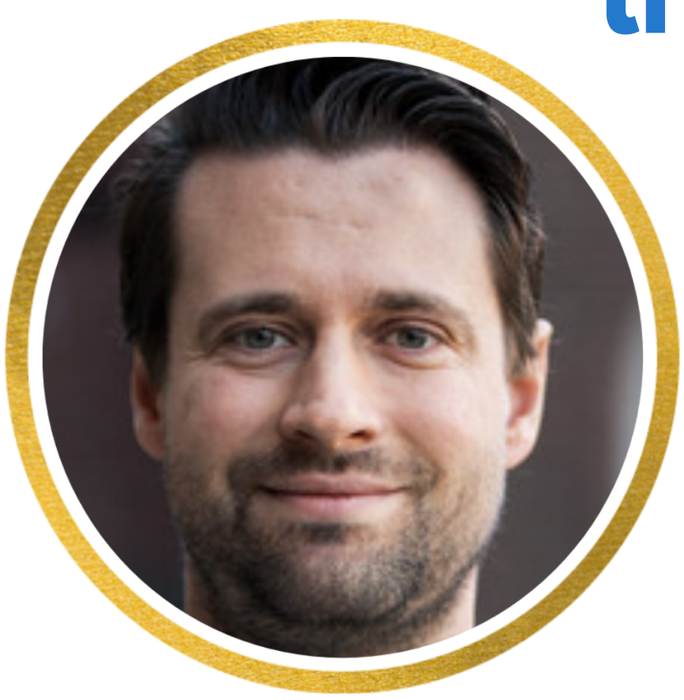
Cracow University of Technology

UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Mathematics for Computer Science and Applications
M4CSA

Seminar Topic:

Modelling and controlling turbulent flows through deep learning



Ricardo Vinuesa

Department of Engineering Mechanics
KTH Royal Institute of Technology
Stockholm

The advent of new powerful deep neural networks (DNNs) has fostered their application in a wide range of research areas, including more recently in fluid mechanics. In this presentation, we will cover some of the fundamentals of deep learning applied to computational fluid dynamics (CFD). Furthermore, we explore the capabilities of DNNs to perform various predictions in turbulent flows: we will use convolutional neural networks (CNNs) for non-intrusive sensing, i.e. to predict the flow in a turbulent open channel based on quantities measured at the wall. We show that it is possible to obtain very good flow predictions, outperforming traditional linear models, and we showcase the potential of transfer learning between friction Reynolds numbers of 180 and 550. We also discuss other modelling methods based on autoencoders (AEs) and generative adversarial networks (GANs), and we present results of deep-reinforcement-learning-based flow control.

Tuesday, May 17, 2022, 11:30 CEST(GMT+2)
Join Zoom Meeting: https://zoom.us/j/94722402566
Meeting ID: 947 2240 2566, Passcode: 456787

Cracow University of Technology

UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN