



FINAL PROJECT ASSIGNMENT

Publicly Available

Identification	Name: Szenka József		ID: 75253779790	
	Code of the Curriculum: 2N-MW0	Specialisation: 2N-MW0-FM	Document ref. number: GEÁT:2023-2:2N-MW0:LWOH9F	
	Curriculum: Gépészeti modellezés mesterképzési szak	Final exam organised by: Department of Fluid Mechanics		
	Final Project issued by: Department of Fluid Mechanics		Final exam organised by: Department of Fluid Mechanics	
Supervisor: Dr. Kristóf Gergely János (71957915589), associate professor				

Project Description	Title	Estimation of time series and distributions using artificial intelligence in fluid mechanics Idősorok és eloszlásának becslése mesterséges intelligencia segítségével az áramlástanban
	Details	1) Literature survey, surveying and analyzing relevant resources of technical literature 2) Introduce a model to generate velocity time series of a turbulent flow 3) A parameter study of the presented model. Determine the possible degree of compression. 4) Apply the DNN model to separate the distribution of co-measured quantities. Estimate the gamma distribution parameter of local concentration based on the gamma parameters of the measured background concentration and the measured total concentration (including background). 5) Model testing using synthetic and measured concentration time series data 6) Summarize the work in the required document format of the MSc Thesis!
	Advisor	Advisor's Affiliation: Dept. Fluid Mechanics, 1111 Budapest, Bertalan L. 4-6. Advisor: Márton KOREN, research engineer

Final Exam	1 st subject (group)	2 nd subject (group)	3 rd subject (group)	4 th subject (group)
	ZVEGEÁTNW02 Computational Fluid Dynamics	ZVEGEÁTNW03 Fluid Mechanics Measurements	ZVEGEÁTNW08 Building and Environmental Aerodynamics	ZVEGEÁTNW11 Open Source Computational Fluid Dynamics

Authentication	Handed out: 27 February 2023		Deadline: 2 June 2023			
	Compiled by: Dr. Kristóf Gergely János (71957915589) Supervisor		Verified by: Dr. János Vad (signed) Head of Department		Approved by: Dr. Gábor Györke (signed) Vice-Dean	
	The undersigned declares that all prerequisites of the Final Project have been fully accomplished. Otherwise, the present assignment for the Final Project is to be considered invalid. Szenka József					