Curriculum Vitae

Mustafa Serdar ÇELEBİ

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Google Scholar:https://scholar.google.com.tr/citations?user=CRMO8HsAAAAJ&hl=tr

Education

YEAR	DEGREE	UNIVERSITY	FIELD
1983 - 1987	B.Sc. (Under Graduate)	Istanbul Technical University	Naval Architecture and Ocean Engineering
1987 - 1990	M.Sc. (Master)	Istanbul Technical University	Hydrodynamics
1993 - 1995	P.D. (N.A.)	Michigan University / USA	Computational Hydrodynamics
1995 - 1997	Ph.D.	Texas A&M University / USA	Computational Hydrodynamics

Academic Experience

TERM	TITLE	INSTITUTE/DIVISION	UNIVERSITY
June 1988 / May 1992	Research Assistant	Faculty of Naval Architecture and Ocean Engineering / Ocean Engineering	Istanbul Technical University
Oct. 1994 / May 1995	Research Assistant	Naval Architecture / Hidrodynamics	University of Michigan
August 1995 / Dec. 1997	Research Assistant	Civil Engineering / Hidrodynamics	Texas A&M University
Jan. 1998 / Dec. 1998	Asst. Prof. Dr.	Faculty of Naval Architecture and Ocean Engineering / Ocean Engineering	Istanbul Technical University
Dec. 1998 / June 2004	Assoc. Prof. Dr.	Faculty of Naval Architecture and Ocean Engineering / Ocean Engineering	Istanbul Technical University
July 2004 / August 2010	Prof. Dr.	Informatics Institute / Informatics	Istanbul Technical University
August 2010 / -	Prof. Dr.	Informatics Institute / Computational Science and Engineering	Istanbul Technical University

Administrative Experience

TERM	POSITION	INSTITUTE
October 1995 – October 1996	President	Turkish Student Association, Texas A&M University
Sept. 2000 – August 2015	Program Coordinator	Computational Science and Engineering, Informatics Institute, ITU
October 2001 – October 2005	Vice Dean	Informatics Institute, ITU
July 2004 – August 2010	Division Head	Informatics Division, Informatics Institute, ITU
August 2010 – August 2015	Division Head	Computational Science and Engineering, Informatics Institute, ITU
January 2004 – January 2011	National Project[*] Director	National Center for High Performance Computing (UHeM)[**], ITU. http://www.uybhm.itu.edu.tr/
January 2011 – July 2013	Founding Director	National Center for High Performance Computing (UHeM)[***], ITU. http://www.uybhm.itu.edu.tr/
August 2008 – July 2013	Dean	Informatics Institute, ITU

[*]Project was designed, budgeted and proposed.

[**]Recruiting, budgeting, performance reviewing over 36 technical personnel.

[***]Established world class Tier IV level 7500 m^2 HPC data center in Istanbul-Turkey.

Refereeing Journals

- Journal of Fluid Mechanics, Cambridge University Press, September 2002-.
- Journal of Fluids and Structures, Academic Press, August 2003-.
- ARI, Bulletin of Istanbul Technical University, November 2003.
- INT. Journal for Numerical Methods in Fluids, Wiley, 2004-.
- Ocean Engineering, Elsevier, 2007-.
- OMAE, ASME Journal, 2011-.
- Int. Journal of Computational Fluid Dynamics, Taylor & Francis, 2010-.
- Computer Methods in Biomechanics and Biomedical Engineering, Taylor & Francis, 2012-.
- Turkish Journal of Engineering and Environmental Sciences, 2009-.
- Advances in Numerical Analysis, Hindawi Pub., 2014-.
- Journal of Nonlinear Dynamics, Hindawi Pub., 2014-.
- Biomedical Engineering Online, 2015-.
- Applied Mathematical Modeling, Elsevier, 2016-.
- Journal of Supercomputing, Springer, 2016-.
- Cardiovascular Engineering and Technology (CVET), Springer, 2018-.

Refereeing Conferences (Organizing or Technical Committee Member)

- ICCSE`05
- ICCSE`06

- **International Conference for Mathematical Methods in Fluid Dynamics and Simulation of Giant Oil and Gas Reservoirs**, SPO and SIAM sponsored conference, Istanbul-TURKEY, 3-5 Sept. 2012.
- The 1st Symposium on Multi-scale, Multi-physics and Turbulent flow Simulations, ICNAAM 12th International Conference of Numerical Analysis and Applied Mathematics, Rhodes-Greece, 22-28 September 2014.
- **The 2nd Symposium on Multiscale, Multiphysics and Turbulent flow Simulations**, ICNAAM 15th International Conference of Numerical Analysis and Applied Mathematics, Thasseloniki-Greece, 25-30 September 2017.

Invited Talks

1] Regional Conference 2010 Supercomputing - New Challenge for Science and Industry, Lecture title: "**High Performance Computing for Science and Engineering**" Venue: Sheraton Hotel, Sofia-Bulgaria, 9 – 10 December 2010.

2] Conference: Using High Performance Computing Technologies in Scientific Computation and Problems, Lecture title: "**High Performance Computing for Science and Engineering in Turkey**," Higher Institute for Applied Sciences and Technology (HIAST), Venue: HIAST Cenference Hall, Damascus-Syria, 13 – 15 December 2010.

3] National Conference: Academic Informatics 2011, Lecture title: "**National HPC Efforts and Applications**," Venue: İnönü University-Malatya, February 02-04 2011.

4] Seminar: Lecture title: "**Selected Studies from Biomechanics and Computational Fluid Dynamics Research Groups at ITU**," Venue: Koc University-Istanbul, April 10, 2013.

5] Panel: Title: "**Importance of High Performance Computing and Simulation in Defence **," Ministry of Defense, 22. Technology Panel of Informatics Systems. Venue: MSB R&D Division, November 27, 2014.

Refereeing Projects as an External Expert

- FP7, ICT Capacities, E-Infrastructures, External Expert, 2007-.
- FP7, ICT Capacities, Virtual Communities, External Expert, 2010-.
- TÜBITAK Scientific Review Panels, 2011-.
- TÜBITAK TEYDEB Projects, Referee, 2014-.
- Oak Ridge Associated Universities (ORAU), Expert, 2012-.
- TÜBITAK TEYDEB Projects, Mentor, 2015-.
- PAZY Foundation, External Expert, 2016-.

General List of Publications

Journals

1] *Geometric Modeling for Fully Nonlinear Ship-Wave Interactions*, Journal of Ship Research, Vol. 41, No.1, March 1997, pp. 10-18.

2] *Fully Nonlinear 3-D Numerical Wave Tank Simulation*, Journal of Ship Research, Vol. 42, No.1, March 1998, pp. 33-45.

3] *Fully Nonlinear Interactions of Waves with a Three-Dimensional Body in Uniform Currents*, Journal of Applied Ocean Research, Vol. 20, June 1998, pp. 309-321.

4] *Numerical Wave Tank for Nonlinear Wave Simulations*, Ocean Wave Measurement and Analysis, Vol. 1, Nov. 1998, pp. 716-724.

5] *Nonlinear Force Calculations by Numerical Wave Tank Simulations*, Ocean Wave Kinematics, Dynamics and Loads on Structures, Apr. 1998, pp. 84-95.

6] *Computation of Transient Nonlinear Ship Waves Using An Adaptive Algorithm*, Journal of Fluids and Structures, Vol. 14 (3), 2000, pp. 281-301.

7] *Nonlinear Transient Wave-body Interactions in Steady Uniform Currents*, Journal of Computer Methods in Applied Mechanics and Engineering, Vol. 190, No.39, July 2001, pp. 5149 – 5172.

8] *Numerical Computation of Pressure in a Rigid Rectangular Tank Due to Large Amplitude Liquid Sloshing*, Turkish Journal of Engineering and Environmental Sciences, Vol. 25, No.6, 2001, pp. 659-674.

9] *Nonlinear Modeling of Liquid Sloshing in a Moving Rectangular Tank*, Journal of Ocean Engineering, Vol 29, No.12, June 2002, pp. 1527-1553.

10] *Numerical Computation of Hydrodynamic Loads on Walls of a Rigid Rectangular Tank Due to Large Amplitude Liquid Sloshing*, Turkish Journal of Engineering and Environmental Sciences, Vol. 26, No.5, 2002, pp. 429-446.

11] *3D Blood Flow Simulations in Human Arterial Tree Bifurcations*, BIYOMUT: 14th National Biomedical Engineering Meeting Proceedings (IEEE Biomedical Engineering), E. ARIBAŞ, S. Pişkin and Celebi M.S., May 2009, pp. 538-541.

12] *Performance Analysis of PDE Based Parallel Algorithms on Different Computer Architectures*, 5th Int. Conf. on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control, Kopan I. and Celebi M.S., IEEE Proc., 2010, pp. 96-100.

13] *Real-Time Deformation Simulation of Non-linear Viscoelastic Soft Tissues*, Simulation: Modeling and Simulation International, Dogan F. and Celebi M.S., Vol. 87, No.3, pp. 179-187, March 2011.

14] *3D Blood Flow Simulation at the Geometry of Thirteen Main Arteries of a Human*, Aribas E., S. Piskin and M.S. Celebi, Journal of Biomechanics, Abstract, Vol:44/S1, P.16, Jan 2011.

15] *Computational Modelling of Thrombus Formation with Coupled Lattice Boltzmann and Discrete Element Methods*, Okan D., Celebi M.S. and B. Şaylan, Proceedings of IASTED International Conference, Biomedical Engineering (Biomed 2011), DOI:10.2316/P.2011.723-119, pp.145-150.

16] *A parametric (inlet) flow analysis of 3D human carotid artery using realistic geometry*, S. Piskin, Aribas E., and M.S. Celebi, Journal of Biomechanics, Abstract, Vol:44/S1, P.17, Jan 2011.

17] *A comparison between non-Newtonian and Newtonian blood viscosity models*, Türkeri H., S. Piskin and M.S. Celebi, Journal of Biomechanics, Abstract, Vol:44/S1, P.17, Jan 2011.

18] *Calculation of Material Coefficients of a Viscoelastic Gel for Validating Soft Tissue Deformations*, Demir G., Doğan F. and M.S. Celebi, Journal of Biomechanics, Abstract, DOI:10.1016/j.jbiomech.2011.02.058, Vol:44/S1, P.58, May 2011.

19] *A comparative study of sub-grid scale (SGS) models in the large eddy simulation (LES) of liquid sloshing*, O.U. Kırlangıç and M.S. Celebi, Journal of Physics, Vol. 318(4), December 2011.

20] *Numerical Blood Flow Simulation with Predefined Artery Movement*, Ş. Pişkin and M.S. Çelebi, BioMedical Engineering and Informatics (BMEI), pp. 654-658, doi:10.1109/BMEI.2012.6513039, IEEE, May 2013.

21] *Analysis of the effects of different pulsatile inlet profiles on the hemodynamical properties of blood flow in patient specific carotid artery with stenosis*, S. Piskin and M.S. Celebi, Journal of Computers in Biology and Medicine, Elsevier, Vol.43, issue 6, p.717-728, July 2013.

22] *An approach for chest tube detection in chest radiographs*, C.A. Mercan and M.S. Celebi, Journal of IET Image Processing, Vol.8, Iss.2, pp.122-129, Jan 2014.

23] *Spectral Analysis of Large Sparse Matrices for Scalable Direct Solvers*, A. Duran, M.S. Celebi, M. Tuncel and Öztoprak F., Springer Proc. Mathematics and Statistics, Vol 87, pp. 153-160, July 2014.

24] *Scalability of OpenFOAM for bio-medical flow simulations*, A. Duran, M.S. Celebi, S. Pişkin and M. Tuncel, Journal of Supercomputing, Vol.71, Issue 3, pp 938-951, March 2015.

25] *Exact Analytical Representation of Fiber Stress Tensor Based on Angular Integration (AI) Through Cellular Level Probabilistic Equations,* G. Çoban, and M.S. Çelebi, Proc. of Numerical Analysis and Applied Mathematics, Vol:1648, Issue:1, Article Number. WOS:000355339701120, UNSP 320002, 2015.

26] *Quasi-non-linear deformation modeling of a human liver based on artificial and experimental data,* F. Doğan, and M.S. Çelebi, Journal of Medical Robotics and Computer Assisted Surgery, 12(3) pp. 410-420 Sept. 2016.

27] *A Novel Computational Remodeling Algorithm for the Probabilistic Evolution of Collagen Fibre Dispersion in Biaxially Strained Vascular Tissue,* G. ÇOBAN, and M. S.

ÇELEBI, Journal of Mathematical Medicine and Biology. WOS:000418360900001, DOI:10.1093/imammb/dqw012, Volume 34, Issue 4, pp 433-467, Dec 2017.

28] *On the Improvement of a Scalable Sparse Direct Solver for Unsymmetrical Linear Equations,* M. S. ÇELEBI, A. Duran, F. Öztoprak, M. Tuncel and B. Akaydın, Journal of Supercomputing. Access full text, WOS:000404596100005, DOI: 10.1007/s11227-016-1892-7, Volume 73, Issue 5, pp 1852-1904, May 2017.

29] *Effects of Using Depletion Interaction Theory in Variable Hematocrit Levels of Bio-flows*, Erke ARIBAŞ and M. Serdar ÇELEBİ, Int. Conf. Of Numerical Analysis and Applied Mathematics, AIP Conference Proceeding 1978, 320004 (2018); DOI: 10.1063/1.5043935, American Institute of Physics, September 2018.

30] *A Thermal Based RBC Aggregation Model for Two-phased Blood Flow*, Erke ARIBAŞ and M. Serdar ÇELEBİ, Korea-Australia Rheology Journal, 32, 121-136(2020), DOI:10.1007/s13367-020-0011-8, May 2020.

Books

1] *Recent Trends in Computational Science and Engineering*, Edited by M. Serdar ÇELEBİ, InTechOpen, ISBN: 978-1-78923-193-9, Print ISBN: 978-1-78923-192-2, May 30th 2018.

Citation Report and Indexes (as of May 2020)

Sum of the Times Cited Total Citation   : 997
h-index   : 12
i10-index   : 14

Peer Review White Papers and Reports

1] *Scalable and Improved SuperLU on GPU for Heterogeneous Systems*, M. Serdar ÇELEBİ, Ahmet DURAN, Mehmet TUNCEL and Bora AKAYDIN, PRACE (partnership for Advanced Computing in Europe), PN:283493, PRACE-2IP white paper (WP44), Available on line at http://www.prace-ri.eu/IMG/pdf/scalablesuperluongpu.pdf, July 13, 2012.

2] *Design and Implementation of New Hybrid Algorithm and Solver on CPU for Large Sparse Linear Systems*, Ahmet DURAN, M. Serdar ÇELEBİ, Mehmet TUNCEL and Bora AKAYDIN, PRACE (partnership for Advanced Computing in Europe), PN:283493, PRACE-2IP white paper (WP43), Available online at http://www.prace-ri.eu/IMG/pdf/wp43-newhybridalgorithmfo_lsls.pdf, July 13, 2012.

3] *A Report on the Survey of HPC Tools and Techniques* (D7.2.1), PRACE (Partnership for Advanced Computing in Europe), PN:RI-312763, PRACE-3IP, Available online at http://www.prace-project.eu/IMG/pdf/d7.2.1.pdf, April 29, 2013.

4] *Structural Analysis of Large Sparse Matrices for Scalable Direct Solvers*, Ahmet DURAN, M. Serdar ÇELEBİ, Mehmet TUNCEL and Figen ÖZTOPRAK, PRACE (partnership for Advanced Computing in Europe), PN:283493, PRACE-2IP white paper

(WP82), Available online at http://www.prace-project.eu/IMG/pdf/wp82.pdf, July 8, 2013.

5] *Performance Analysis of BLAS Libraries in SuperLU_DIST for SuperLU_MCDT (Multi Core Distributed) Development*, M. Serdar ÇELEBİ, Ahmet DURAN, Mehmet TUNCEL, Bora AKAYDIN and Figen ÖZTOPRAK, PRACE (partnership for Advanced Computing in Europe), PN:283493, PRACE-2IP white paper (WP83), Available online at http://www.prace-project.eu/IMG/pdf/wp83.pdf, August 20, 2013.

6] *A Report on Application Enabling for Capability Science in the MIC Architecture* (D7.1.3), PRACE (Partnership for Advanced Computing in Europe), PN:RI-261557, PRACE-1IP, Available online at http://www.prace-project.eu/IMG/pdf/d7.1.3_1ip.pdf December 13, 2013.

7] *Analysis of SuperLU Solvers on Intel® MIC Architecture*, Ahmet DURAN, M. Serdar ÇELEBİ, Mehmet TUNCEL, Bora AKAYDIN and Figen ÖZTOPRAK, PRACE (Partnership for Advanced Computing in Europe), PN:261557 PRACE-1IP white paper (WP135), Available online at http://www.prace-ri.eu/IMG/pdf/wp135.pdf, Dec. 25, 2013.

8] *Exploitation of HPC Tools and Techniques* (D7.2.2), *PRACE (Partnership for Advanced Computing in Europe),* PN:RI-312763, PRACE-3IP, Available online at http://www.prace-project.eu/IMG/pdf/d7.2.2_3ip.pdf, May 24, 2014.

9] *Scalability of OpenFOAM for Bio-medical Flow Simulations*, A. Duran, M.S. Çelebi, S. Piskin, and M. Tuncel, PRACE PN:RI-312763, PRACE-3IP white paper, WP 162, https://www.researchgate.net/publication/263769061_Scalability_of_OpenFOAM_for_Bio-medical_Flow_Simulations, June 9, 2014.

International Conferences, Workshops and Symposiums

1] *Nonlinear Wave-Body Interactions in a Numerical Wave Tank*, 12th Int. Workshop on Water Waves and Floating Bodies, Marseilles, France, March 16 1997.

2] *Numerical Wave Tanks for Nonlinear Wave-Body Interactions*, Offshore Technology Research Center`97 International Conference, College Station, Texas, USA, May 2-3 1997.

3] *A Numerical Wave Tank for Nonlinear Wave Simulations*, 3rd Int. Symposium on Ocean Wave Meas. and Analysis, WAVES`97, Virginia Beach, Virginia, USA, Nov. 3 1997.

4] *Nonlinear Force Calculations by Numerical Wave Tank Simulations*, Proc. ASCE Conf. "Ocean Wave Kinematics, Dynamics and Loads on Structures", Houston, USA, April 1998.

5] *Numerical Simulation of Large Amplitude Liquid Sloshing in Rigid Rectangular Tanks,* 5th International Conference on Marine Science and Technology Varna, Bulgaria, 9-11 November, 2000.

6] *Some Notes on Hydrodynamic Design of Fishing Boats,* 5th International Conference on Marine Science and Technology Varna, Bulgaria, 9-11 November, 2000.

7] *A Carodit Artery Bifurcation Modelling for Blood Flow*, Şenol Pişkin and M. Serdar Çelebi, 7th International Symposium on Fluid Control, Measurement and Visualization, FLUCOME'03, Sorrento-Naples Italy, August, 2003.

8] *A Surface Reconstruction Approach for a Scattered Data Using Gaussian Sphere*, International Conference on Signal Processing 2003, Antalya-TURKEY, 24-26 September, 2003.

9] *A High Performance Computing Approach to Computational Fluid Dynamics Problems*, 5th European Workshop on OpenMP, Aachen, Germany, September 22-26, 2003.

10] *A Surface Reconstruction Approach for Scattered Data Using Convex Combination Mapping Method,* Elif Üstündağ, Baybora Baran and M. Serdar Çelebi*, International Conference on Signal Processing'2004, September, 2004.*

11] *A B-Spline Curve Fitting Approach by Implementing the Parameter Correction Terms,* Elif Üstündağ and Serdar Çelebi, International Conference on Computational Science and Engineering, Istanbul, TURKEY,June 27-30, 2005.

12] *Effects of Changing the Parameters of a Carotid Artery Bifurcation Model,* Şenol Pişkin and M. Serdar Çelebi, International Conference on Computer Aided Engineering (CAE) and Computational Technologies for Industry (TCN CEA 2005), Lecce, ITALY, October 05-08, 2005.

13] *Three Dimensional Carotid Artery Modeling in a Parallel Environment,* Şenol Pişkin and M. Serdar Çelebi, Meeting on Applied Scientific Computing and Tools Grid Generation, Approximation and Visualization-MASCOT'05, Lecce, ITALY, October, 2005.

14] *Option Based Default Risk Modeling With Interval Arithmetic,* Altan Arslan and M. Serdar Çelebi, International Conference on Computational Science and Education, Rochester-NY, USA, August 7-10, 2006.

15] *Investigating the Effects of Variable Inlet Profiles at Main Carotid Artery and Different Carotid Artery Bifurcation Angles,* Şenol Pişkin and M. Serdar Çelebi, International Conference on Computational Science and Education - ICCSE'06, Rochester-NY, USA, August 7-10, 2006.

16] *An FSI Modelling For Valve Motion of Hermetic Reciprocating Compressor,* Selcuk Tabak and Serdar Çelebi, International Conference on Computational Science and Education - ICCSE'06, Rochester-NY, USA, August 7-10, 2006.

17] Carotid Artery Modeling Using Real Geometry, S. Piskin, M.S. Celebi, Meeting on Applied Scientific Computing and Tools, Grid Generation, Approximation and Visualization – MASCOT 07, Rome-Italy, Sept. 2007.

18] *A Study on Blood Flow Simulation in Human Carotid Artery Bifurcations*, Aribas E., S. Piskin, M.S. Celebi, Mimics Innovations Awards, Belgium CAE Section, 2008.

19] *Coupled Simulation of a Carotid Artery Bifurcation Model,* Senol Piskin, Erke Aribas, and M. Serdar Celebi, 10TH Mesh Based parallel Code Coupling Interface USER FORUM, Sankt Augustin, Germany, February 17-18, 2009.

20] *Viscoelastic Deformation of Soft Tissues,* Fırat Doğan, and M. Serdar Çelebi, 15th International Biomedical Science and Technology (BIOMED'09), Proc. 15th International Biomedical Science and Technology, pp. 35-36, Northern Cyprus, August 16-19, 2009.

21] *Performance Analysis of PDE Based Parellel Algorithms on Different Computer Architectures,* İlker Kopan and M. Serdar Çelebi, Fifth International Conference on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control (ICSCCW'09), Famagusta - North Cyprus, September 2-4, 2009.

22] *Fully Automatic Chest Tube Figure Removing from the Postero-Anterior Chest Radiography*, C. Ahmet Mercan and M. Serdar Celebi. IASTED International Conference on Computer Graphics and Imaging, Innsbruck-Austria, February 15 – 19, 2010.

23] *Non-newtoian Blood Flow Simulation in a Realistic Artery Domain,* Hasret Türkeri Şenol Pişkin and M. Serdar ÇELEBİ, ECCOMAS CFD 2010, Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portekiz, June 14-17, 2010.

24] *A 3D Human Carotid Artery Simulation Using Realistic Geometry with two level Bifurcation and Experimental Input Data,* Piskin S., Aribas E., Celebi M.S., ECCOMAS CFD 2010, Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portekiz, June 14-17, 2010.

25] *Simulation of Blood Flow in Human Aorta Including Thirteen Main Arteries,* Aribas E., Pişkin Ş. and Celebi M.S., ECCOMAS CFD 2010, Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portekiz, June 14-17, 2010.

26] *Coupled Simulation of Viscoelastic Artery and Newtonian Blood Flow Models,* Pişkin Ş. and Celebi M.S., 1st Int. Conference on Multiphysics Simulation, Bonn-Germany, June 22-23, 2010.

27] *Determination of Material Constants of Viscoelastic Gel for Validating Soft Tissue Simulations,* G. Demir, F. Doğan, Celebi M.S., The 2010 International Congress on Computer Applications and Computational Science (CACS 2010), Singapore, p.843-846, 4-6 December 2010.

28] *Computational Modeling of Thrombus Formation with Coupled Lattice Boltzmann and Discrete Element Methods*, Okan D., Celebi M.S. and B. Şaylan, IASTED International Conference on Biomedical Engineering (Biomed 2011), Innsbruck-Austria, February 16-18, 2011.

29] *Visualization of Blood Flow Simulation in Human Arteries,* E. Baltaoğlu, Ş. Pişkin, M.S. Çelebi, 3rd International Conference on Computational Methods in Engineering and Science, FEMTEC (Finite Element Methods in Engineering and Science) 2011, South Lake Tahoe, USA, 09-13 May, 2011.

30] *Comparison of Two Blood Flow Simulations with and without a Compliant Vessel Wall Model,* Ş. Pişkin, M.S. Çelebi, 3rd International Conference on Computational Methods in Engineering and Science, FEMTEC (Finite Element Methods in Engineering and Science) 2011, South Lake Tahoe, USA, 09-13 May, 2011.

31] *A Vessel Segmentation Method for MRA Images Based on Multi-scale Analysis and Level Set Framework,* D. Uğurlu, S Demirci, N Navab, M.S. Çelebi, 14th International Conference on Medical Image Computing and Computer Assisted Intervention,

Computing and Visualization for (Intra) Vascular Imaging, Toronto, Canada, 18-22 September, 2011.

32] *A Comparative Study of Sub-grid Scale (SGS) Models in the Large Eddy Simulation (LES) of Liquid Sloshing,* O.U. Kırlangıç and M.S. Çelebi, 13th European Turbulence Conference, Warshaw-Poland, 12-15 September, 2011.

33] *Implementation of the Dynamic Localization Model (constrained) for Large Eddy Simulation in OpenFOAM,* O.U. Kırlangıç and M.S. Çelebi, 7th OpenFOAM® Workshop, Darmstadt-Germany, June 25-28, 2012.

34] *Scalability of SUPERLU Solvers for Large Scale Complex Reservoir Simulations,* M.S. Çelebi, A. Duran and M. Tuncel, Int. Conference for Mathematical Methods in Fluid Dynamics and Simulation of Giant Oil and Gas Reservoirs, Accepted for Oral Presentation, Supported by SPE and SIAM, Istanbul-Turkey, Sept. 3-5, 2012.

35] *A Large Eddy Simulation of Two-phase Flows by Using an Inhomogeneous Subgrid Scale Model,* O. U. Kirlangıç and M.S. Çelebi, Int. Conference for Mathematical Methods in Fluid Dynamics and Simulation of Giant Oil and Gas Reservoirs, Accepted for Poster Session, Supported by SPE and SIAM, Istanbul-Turkey, Sept. 3-5, 2012.

36] *Numerical Blood Flow Simulation with Predefined Artery Movement,* Ş. Pişkin and M.S. Çelebi, 5th International Conference on BioMedical Engineering and Informatics (BMEI 2012), Supported by IEEE, pp 654-658, doi:10.1109/BMEI.2012.6513039 Chongqing-China, October 16-18, 2012.

37] *Spectral Analysis of Large Sparse Matrices for Scalable Direct Solver*, A. Duran, M. Tunçel, B. Akaydın, F. Öztoprak and M.S. Çelebi, Gulf Int. Conference on Applied Mathematics (GICAM13), In Cooperation with SIAM, Kuwait, November 19-21, 2013.

38] *Exact Analytical Representation of Fiber Stress Tensor Based on Angular Integration (AI) Through Cellular Level Probabilistic Equations*, Gürsan ÇOBAN and M. Serdar ÇELEBİ, The 1st Symposium on Multiscale, Multiphysics and Turbulent flow Simulations, ICNAAM, 12th International Conference of Numerical Analysis and Applied Mathematics, Rhodes-Greece, September 22-28, 2014.

39] *A Comparison of SuperLU Solvers on the Intel MIC Architecture*, A. DURAN, M. Tuncel, M. Serdar ÇELEBİ and F. O. Topkaya, Numerical Computations: Theory and Algorithms (NUMTA 2016), Access full manuscript, DOI: 10.1063/1.4965394, Calabria-Italy, June 19-25, 2016.

40] *Effects of Using Depletion Interaction Theory in Variable Hematocrit Levels of Bio-flows*, Erke ARIBAŞ and M.Serdar ÇELEBİ, AIP Conference Proceedings 1978 (1): 320004, DOI:10.1063/1.5043935, July 2018. The 2nd Symposium on Multiscale, Multiphysics and Turbulent flow Simulations, ICNAAM, 15th International Conference of Numerical Analysis and Applied Mathematics, September 25-30, 2017.

Scientific Projects

International

1] e-COST: Network for Sustainable Ultra-scale Computing (NESUS), [*Goal is to establish an open European research network targeting sustainable solutions for ultrascale computing aiming at cross fertilization among HPC, large scale distributed systems, and big data management*], ICT COST Action IC 1305, MC Member, 15 Nov. 2013 – 14 Nov. 2017.

2] EUDAT: Pan-European Data Infrastructure Project, Observer status (as UHeM).

3] Parallel Algorithm Development for Large Scale Sparse Linear Systems in Oil Reservoir Simulation (PASSOR), PRN: 6600028651, Project Director, Computational Linear Algebra Project for Saudi ARAMCO, July 1, 2012 – 2017.

4] VPH NoE: Virtual Physiological Human Network of Excellence – FP7-ICT-2007 5.3 Project, GAN:223920, June 2008 – Dec. 2012.

5] PRACE-3IP: The Partnership for Advanced Computing in Europe - Third Implementation Phase Project, GA Number: 312763, 490K Euro, Contact Person of Turkey, Sept. 2012 – Sept. 2014.

6] PRACE-2IP: The Partnership for Advanced Computing in Europe - Second Implementation Phase Project, GA Number: 283493, 607K Euro, Contact Person of Turkey, Sept. 2011 – Sept. 2013.

7] PRACE-1IP: The Partnership for Advanced Computing in Europe - First Implementation Phase Project, persistent pan-European Research Infrastructure for High Performance Computing (HPC), GA Number: 261557, TR Budget: 502K Euro, Contact Person of Turkey, July 2010 – July 2012.

8] Nonlinear Numerical Wave Tank Simulation, Project Director: Prof. Dr. M.H. KIM, Texas A&M University and OTRC, worked as a Researcher, 1995-1997.

National (Ministry of Development – Formerly DPT)

1] National Center for High Performance Computing, Project Director, Funded by State Planning Organization of Turkey (DPT), January 2004-2013.

2] Education and Research Project for Advanced Technologies in Engineering, Funded by State Planing Organization of Turkey (DPT). Computational Science and Engineering Program, Program Coordinator, January 2001-2009.

National (TUBITAK – Scientific and Technological Research Council of Turkey)

1] Computational Modeling of Deep Vein Thrombosis, Funded by Tübitak under Project Type 1001 and Project Number 117M430, December 2017 - December 2020.

National (ROKETSAN – Defense Company of Turkey)

1] Computational Modeling of Micro Gravity Propellant Sloshing Dynamics, Funded by Roketsan, Project No:138298/154139, January 2018 - March 2020.

ITU Research Fund (BAP) Supported

1] A Numerical Approach for Growing and Remodelling of Soft Tissues, With Research Assistant Gursan ÇOBAN, Sept. 2015 – June 2017.

2] Blood Flow Simulation in Human Arterial Tree, with PhD Student Erke Arıbaş, Sept. 2014 - .

3] A Study on Sub Grid Scale model for Severe Liquid Sloshing in a confined container, with PhD Student Ozgur Ulas Kırlangıc, Oct. 2014 -.

4] ITU Digital E-Thesis Project, Mutual Project with Informatics Institute and Institute of Science and Engineering of ITU, Infrastructure Project of ITU, June 2010- Sept. 2012.

5] Preparing the Required Libraries and Radiographs for Studying Human Chest X-Ray Images using Convolution Neural Network (CNN) Methods, with Research Assistant Ahmet Cem Mercan, August 2002-2004.

6] Multidirectional Wave Modelling in Numerical Wave Tank, with Research Assistant Mehmet Belgin, August 2001-2002.

7] Modelling and Time Domain Simulation of Free Surface and Nonlinear Wave-body Interactions, March 2000-2002.

8] Numerical Modelling of Liquid Sloshing in a Rigid Rectangular Tank, August 2000-2002.

Student Thesis Projects

1] Mechanical Modeling of Growth and Remodeling Process in Soft Biological Tissues, with Research Assistant Gürsan Çoban (PhD Student), May. 2010 -.

2] Blood Flow Simulation in Human Arterial Tree, with Lecturer Erke Arıbaş (PhD Student), Oct. 2010 -.

3] A Study on Sub Grid Scale model for Severe Liquid Sloshing in a confined container, with Lecturer Özgür Ulaş KIRLANGIÇ (PhD Student), Sept. 2010 -.

4] Non-Newtonian Blood Flow Simulation in a Realistic Artery, with Research Assistant Hasret Türkeri, Finalized as of Jan. 2011.

5] Estimation of Material Coefficients of Soft Tissue Using Experimental Data and Inverse Finite Element Method, with Research Assistant Gülnur Demir, Finalized as of Feb. 2011.

Reports

1] A Liquid Sloshing in a Moving Rectangular Tank, Department Report, Faculty of Naval Arch. And Ocean Engineering, ITU, March 2001.

2] Creation of Linear Coons Surface Patch Using Lagrange Parabolic Blending Functions for a Given Offset Table, Unpublished, 1994.

3] Modelling the Reynolds-stress Turbulence Closure Near Free Surface, Unpulished, 1993.

Computing Grants

1] **HiSSor** *(Highly Scalable Linear Solver Project),* This work was granted access to the HPC resources of Distributed European Computing Initiative by the PRACE-2IP, receiving funding from the European Community's Seventh Framework Program (FP7/2007-2013) under grant agreement n° RI-283493. 5 Million CPU Core Hours, Granting date Oct. 2012.

2] **Large Scale LES Simulation for Two-phase Flows** *Project*, This work was granted access to the HPC resources of Distributed European Computing Initiative by the PRACE-2IP, receiving funding from the European Community's Seventh Framework Program (FP7/2007-2013) under grant agreement n° RI-283493. 150 Thousand CPU Core Hours, Granting date Oct. 2012.

National Journals

1] *Nonlinear Ship Wave Interactions,* Bulletin of Turkish Naval Academy, Tuzla/Istanbul, Turkey, pp. 27-36, June 1999.

2] *Future Naval Forces,* Journal of Turkish Naval Forces, In Turkish, Ankara, pp. 71-77, June 1999.

3] *Cariers and Their General Design Principles,* Journal of Turkish Naval Forces, In Turkish, Ankara, pp. 36-41, March 2000.

4] *A Preliminary Design for an Attack Boat,* Bulletin of Turkish Naval Academy, In Turkish, Tuzla/Istanbul, Turkey, pp. 39-48, March 2000.

National Conferences, Symposiums & Congresses

1] *An Attack Boat Preliminary Design with the Capability of Anti-Submarine Warfare*, Technical Congress of Naval Arch. & Ocean Technology, In Turkish, ITU, Istanbul, Dec. 2-3 1999.

2] *On the General Design Parameters of Aircraft Cariers*, Technical Congress of Naval Arch. & Ocean Technology, In Turkish, ITU, Istanbul, Dec. 2-3 1999

3] *Serbest Su Yüzeyinde Lineer Olmayan Akışkan-Cisim Etkileşimlerinin Zamana Bağlı Modellemesi için Uyarlamalı Örgü Algoritmaları*, XII. National Mechanics Congress, Konya, Turkey, 10-14 Sept., 2001.

4] *3D Blood Flow Simulations in Human Carotid Artery Bifurcations*, Erke Aribas, Senol Piskin, M. Serdar Celebi, 14. National Biomedical Conference, Izmir-Turkey, May 20-24 2009.

5] *Estimation of quasi-linear viscoelastic material parameters using nonlinear optimization method,* Fırat Doğan and M. Serdar Celebi, 14. National Biomedical Conference-IEEE, Izmir-Turkey, Published in IEEE Xplorer, May 20-24 2009.

6] *Indentation Experiments on Viscoelastic Gel Material for Validating Medical Simulations,* Fırat Doğan, Gülnur Demir and M. Serdar Celebi, 15. National Biomedical Conference-IEEE, Biyomut 2010, Antalya-Turkey, May 20-24 2010.

7] *İnsan Damar Ağındaki Aort ile Birlikte Onüç AnaDamarın Kan Akışının Modellenmesi,* Erke Arıbaş, Şenol Pişkin and M. Serdar Celebi, 5. National Biomechanics Conference, Çeşme/İzmir-Turkey, Sept. 23-25, 2010.

8] *Gerçek Geometri ve Çeşitli Deneysel Giriş Koşulları Kullanılarak Üç Boyutlu İnsan Şah Damarı Benzetimi,* Şenol Pişkin, Erke Arıbaş and M. Serdar Celebi, 5. National Biomechanics Conference, Çeşme/İzmir-Turkey, Sept. 23-25, 2010.

9] *Newtonyen olan ve olmayan Kan Viskozite Modellerinin Karşılaştırılması,* Hasret Türkeri, Şenol Pişkin and M. Serdar Celebi, 5. National Biomechanics Conference, Çeşme/İzmir-Turkey, Sept. 23-25, 2010.

10] *Shear Stress Analysis in Thirteen Main Arteries,* Erke Arıbaş and M. Serdar Celebi, 16. National Biomedical Engineering Conference-IEEE, Biyomut 2011, Antalya-Turkey, Oct. 13-16 2011.

11] A *Multi Grid Approach for Modeling of Deformable Soft Tissues ,* Elif Üstündağ Soykan and M. Serdar Celebi, 16. National Biomedical Engineering Conference-IEEE, Biyomut 2011, Antalya-Turkey, Oct. 13-16 2011.

12] *Blood Flow Simulation with Pre-Defined Vessel Movement,* Şenol Pişkin and M. Serdar Celebi, 16. National Biomedical Engineering Conference-IEEE, TIPTEKNO 11, Biyomut 2011, Antalya-Turkey, Oct. 13-16 2011.

13] *Numerical Blood Flow Simulation with One Dimensional Artery Movement,* Şenol Pişkin and M. Serdar Celebi, National Congress for Medical Technologies-TIPTEKNO 12, Antalya-Turkey, Nov. 01-03 2012.

14] *Oscillating Shear Index, Time Averaged Wall Shear Index, Relative Residence Time Analysis in 3D Structured Analytical Artery,* Erke Arıbaş and M. Serdar Celebi, National Congress for Medical Technologies-TIPTEKNO 16, **DOI:** 10.1109/BMEI.2012.6513039, Antalya-Turkey, Oct. 27-29 2016.

Graduated Students

1] **Mehmet BELGIN**, *Multidirectional Wave Modeling in a Numerical Wave Tank*, Master, Institute of Science and Technology, ITU, May 2002.

2] **Mehmet BELGIN**, *A High Performance Computing Approach to Computational Fluid Dynamics Problems*, Master, Informatics Institute, ITU, June 2003.

3] **Senol PISKIN**, *A Carotid Artery Bifurcation Modeling for Blood Flow*, Master, Informatics Institute, ITU, 2003.

4] **Baybora BARAN**, *Surface Reconstruction Approaches Using Scattered Data Points*, Master, Informatics Institute, ITU, 2003.

5] **Elif ÜSTÜNDAĞ**, *Reparameterization of Curve and Surface for a Scattered Data Based on B-Spline Approximation,* Master, Informatics Institute, ITU, May 2005.

6] **Selçuk TABAK**, *An FSI Modelling For Valve Motion of Hermetic Reciprocating Compressor,* Master, Informatics Institute, ITU, September 2006.

7] **İlker KOPAN**, *Performance Analysis of PDE Based Parellel Algorithms on Different Computer Architectures,* Master, Informatics Institute, ITU, September 2009.

8] **Çağatay AKÇADOĞAN**, *Parallelization of Chebyshev Preconditioned Conjugate Gradient Method Using Two Dimensional Cartesian Topology*, Master, Informatics Institute, ITU, December 2009.

9] **Hasret TÜRKERİ**, *Non-Newtonian Blood Flow Simulation in a Realistic Artery* Master, Informatics Institute, ITU, May 2010.

10] **Fırat DOĞAN**, *Physically Based Soft Tissue Deformation Modeling,* **PhD.**, Informatics Institute, ITU, June 2010.

11] **Gülnur DEMİR**, *Estimation of Material Coefficients of Soft Tissue Using Experimental Data and Inverse Finite Element Method*, Master, Informatics Institute, ITU, January 2011.

12] **Esra BALTAOĞLU**, *Large Scale Visualization of Blood Flow for Human Artery*, Master, Informatics Institute, ITU, January 2011.

13] **Okan DOĞRU**, *Computational Blood Clothing Modeling with Coupled Lattice Boltzmann and Discrete Element Methods*, Master, Informatics Institute, ITU, April 2011.

14] **Devran UĞURLU**, *Vessel Segmentation and Surface Reconstruction From MRA Images*, Master, Informatics Institute, ITU, September 2012.

15] **Mehmet TUNÇEL**, *Designing a Fast Direct Sparse Matrix Solver for Multi-Core Distributed Systems* , Master, Informatics Institute, ITU, May 2013.

16] **Şenol PİŞKİN**, *A Numerical Three Dimensional Blood-Artery Wall Interaction Model For Human Carotid Artery and Its Applications*, **PhD.**, Informatics Institute, ITU, Sept. 2013.

17] **Yağmur GÜLKANAT**, *Modeling of Blood Flow and Vessel Wall Interaction for Stenoised Coronary Arteries*, Master, Informatics Institute, ITU, June 2014.

18] **Ahmet Cem MERCAN**, An *Approach for the Chest Tube Detection in Chest Radiographs Using Convolutional Neural Network*, **PhD.**, Informatics Institute, ITU, Feb. 2015.

19] **Halil Ertürk ESEN**, A Novel Multivariate *Stochastic Volatility Model and Estimation With GPU Computing,* **PhD.**, (co-advising with Prof. Dr. Burç ULENGİN), Informatics Institute, ITU, June 2016.

20] **Gürsan ÇOBAN**, *Biomechanical Modeling of Growth and Remodeling Process in Soft Biological Tissue*, **PhD.**, Informatics Institute, ITU, September 2016.

21] **İbrahim ÖZKÜÇÜK**, *Quasi-Newton and Artificial Compressibility Based Partitioned Algorithms for Strongly Coupled Fluid Structure Interactions*, Master, Informatics Institute, ITU, June 2017.

22] **Utkan ÇALIŞKAN**, *Two-Phase Blood Flow Modeling for Deep Vein Thrombosis*, Master, Informatics Institute, ITU, June 2017.

23] **Meysam ABOUTALEBI**, *Heterogeneous Computing for Multi-Phase Blood Flow Simulations*, Master, Informatics Institute, ITU, June 2018.

24] **Afrah N. FAREA**, *On the Analysis and Evaluation of Sparse Hybrid Linear Solvers*, Master, Informatics Institute, ITU, June 2018.

25] **Merve NARİNSES**, *Rupture Status Investigation of Patient Specific Cerebral Aneurysms by Analyzing Hemodynamic Factors Using Computational Fluid Dynamics*, Master, Informatics Institute, ITU, December 2018.

Current Graduate Students

Ph.D

1] **Erke ARIBAŞ**, *Modelling of Multi-Phase Blood Flow with Thermal coupling using Depletion Interaction Theory*, Ph.D., Informatics Institute, ITU.

2] **Reza DARYANİ**, *Computational Hemodynamic Design of Heart and Venous Valves Based on Multi-Phase Flow and FSI Modelling*, Ph.D., Mechanical Engineering, Heat and Fluid, Institute of Science and Technology, ITU.

3] **Afrah Najib FAREA**, *Quantum Computing for Systems of Linear Equations*, Ph.D., Informatics Institute, ITU.

4] **Emre Cenk ERSAN**, *Adaptive Mesh Refinement Algorithms for Fluid-Structure Interactions*, Ph.D., Informatics Institute, ITU.

Master

1] **Sidrt A. MULKİ**, *Implementation of Segmentation and Reconstruction*

Algorithms for Patient Specific Medical Images, Master, Informatics Institute, ITU.

2] **Selim Fırat AYDIN**, *Modelling of Multi-Phase Blood Flow Interaction with Viscoelastic Vessel Wall*, Master, Informatics Institute, ITU.

3] **Berrak BAŞERAS**, *Computational Modeling of Endovascular Stents*, Master, Informatics Institute, ITU.

4] **Burak YAVUZ**, *Modeling of Fluid Structure Interactions in Multi-Phase Flows*, Master, Informatics Institute, ITU.

5] **Engin Deniz ALPMAN**, *Artificial Intelligence Model for Multi-Phase and Multi-Physics Simulation of Human Blood Flow*, Master, Informatics Institute, ITU.

6] **Yeşim DEĞİRMEN**, *Multi-Phase and Multi-Physics Simulation of Human Blood Flow*, Master, Informatics Institute, ITU.

7] **Peyman NOROUZIGIVI**, *Multi-Scale and Multi-Phase Simulation of Human Blood Flow*, Master, Mechanical Engineering, Heat and Fluid, Institute of Science and Technology, ITU.

Research

- ## Active Research Areas

Computational Fluid Dynamics Group (http://www.be.itu.edu.tr/index.php/en/research/89)

- Fluid-Structure Interaction (FSI) Modelling, Quasi-Newton based Coupling Techniques
- Fluid-Structure-Thermal Interaction Modelling
- Large scale LES and DNS Modelling
- Design Optimization based on coupled CFD and Structural Modelling
- LES Sub-Grid Scale Turbulence Modeling for Two Phase Flows
- Multi-scale and Multi-physics Modelling in Bio-flows
- Macro- and Microgravity Liquid Sloshing
- Cryogenic Hypersonic Tank Sloshing
- Coupled Sloshing and Vehicle Dynamics
- Blood Flow Modeling in a Viscoelastic Artery and Arterial Network of a Human

Computational Biomechanics Group (http://biocomp.be.itu.edu.tr/)

- Growth and Remodeling of Soft Tissues
- Human Blood Network Modeling
- Vessel Segmentation and Surface Reconstruction Techniques
- Blood Clothing Modeling with Red Blood Cell Interaction
- Thrombus Formation under Blood Flow
- Modeling of Deep Vein Thrombosis (DVT)
- Multi-Physics Modeling of Blood Rheology

- Multi-Phase Modeling of Blood Rheology

Animations of our Research Group located in YouTube
Numerical Modeling of the Blood Flow in Human Arterial Tree

Parallel Computing Group

- Parallelization Approaches for Numerical Algorithms
- Communication Avoiding Algorithms
- Performance Measurement and Analysis of Parallel Algorithms
- Application Scaling on Extreme Large Scale Systems
- Resilience and Fault Tolerance of Applications on Large Scale Systems
- Scalability of Linear Solvers on GPGPU's
- Parallel Large Scale Scientific Visualization

Computational Linear Algebra Group (http://lincomp.be.itu.edu.tr/)

- Designing Scalable Algorithms for Large Scale Linear Set of Equations
- Scalable Linear Sparse Solvers for Many-core Distributed Systems
- Scalable Linear Sparse Solvers for Heterogenous Systems
- Nonlinear Algebra: Large Scale Nonlinear Equations
- Large Scale Unconstraint optimization
- Thrust Region (Levenberg-Marquardt) and Line Search Methods
- Quasi-Newton (Inexact Newton Methods)
- Barzilai & Borwein (BB) Like Methods
- BFGS like Quasi-Newton Methods
- Powel Symmetric Broyden (PSB) and Symmetric Rank one (SR1) Methods
- Hybrid Nonlinear Solvers
- Hybrid (Direct and Iterative) Sparse Linear Solvers

- ## <u>Inactive Research Areas</u>

Computational Fluid Dynamics

* Nonlinear Unsteady Ship Hydrodynamics
* Computational Free Surface Hydrodynamics
* Nonlinear Wave Body Interactions
* Numerical Wave Tank Simulation
* Floating Body Motions and Fluid-Structure Interactions

<u>Organized Workshops, Summer Schools and Conferences</u>

1) **ITU-Informatics Institute, "Grid Workshop"**, SDKM Conference Center-ITU, Maslak-Ayazaga, October 18-22, 2004. Joint event with ITU, İntel, Oracle and Sun Micro Systems.

2) **ITU Grid Days**, SDKM Conference Center-ITU, July 12-14, 2004. Joint event with HP (Niraj Srivasta, Martin Antony Walker), Southern Partnership for Advanced Computational Infrastructure SPACI (Massimo Cafaro) and CERN (Markus Schulz).

3) **International Conferance For Computational Science And Engineering**, ICCSE`05, Istanbul-Turkiye, Scientific Committee, 2005.

4) **International Conferance For Computational Science And Engineering**, ICCSE`06, Rochester NY-USA, Scientific Committee, 2006.

5) **Informatics Institute, "MultiCore & Paralel Programming" Workshop**, ITU Ayazaga campus - Maslak, İstanbul-TURKEY, Nov. 8-12 2006.

6) **First National High Performance Computing Summer School,** Organized by National Center For High Performance Computing of Turkey (UYBHM), http://yazokulu.uybhm.itu.edu.tr, ITU Ayazaga campus, Istanbul-Turkey, July 16-20, 2007.

7) **Second National High Performance Computing Winter Workshop,** Organized by National Center For High Performance Computing of Turkey (UYBHM), ITU Ayazaga campus, Istanbul-Turkey, Jan 21-Feb 1, 2008.

8) **Third National High Performance Computing Summer School,** Organized by National Center For High Performance Computing of Turkey (UYBHM), http://workshop.uybhm.itu.edu.tr, ITU Ayazaga campus, Istanbul-Turkey, Sept. 1-12, 2008.

9) **Parallel Debugging Trainning,** Organized by Informatics Institute and National Center For High Performance Computing of Turkey (UYBHM), http://uybhm.itu.edu.tr/totalview.html, ITU Ayazaga campus, Istanbul-Turkey, Sept. 15-16, 2008.

10) **Fourth High Performance Computing and Parallel Programming Summer School,** Organized by National Center For High Performance Computing of Turkey (UYBHM), http://workshop.uybhm.itu.edu.tr, ITU Ayazaga campus, Istanbul-Turkey, June 15-26, 2009.

11) **Fifth High Performance Computing and Parallel Programming Summer School,** Organized by National Center For High Performance Computing of Turkey (UYBHM), http://workshop.uybhm.itu.edu.tr, ITU Ayazaga campus, Istanbul-Turkey, June 21- July 2, 2010.

12) **A workshop on "Parallel Algorithms and Programming on GPUs",** Organized by National Center For High Performance Computing

of Turkey (UYBHM), http://gpgpu.uybhm.itu.edu.tr/workshop.html, ITU Ayazaga campus, Istanbul-Turkey, Dec.18-19, 2010.

13) **Sixth High Performance Computing and Parallel Programming Summer School,** Organized by National Center For High Performance Computing of Turkey (UYBHM), http://workshop.uybhm.itu.edu.tr, Parallel Programming, Computational Chemistry, Computational Nanoscience, GPGPU (CUDA, OpenCL) and Basic Linux workshops, ITU Ayazaga campus, Istanbul-Turkey, June 13- 30, 2011.

14) **A Parallel Debugging workshop for softwares running on CPU and GPUs,** Organized by National Center For High Performance Computing (UHeM), http://ddt-training.uybhm.itu.edu.tr/, Venue: ITU Ayazaga campus, Informatics Institute, Istanbul-Turkey, Jan.12, 2012.

15) **Computational Fluid Dynamics (CFD) with OpenFOAM,** Organized by National Center For High Performance Computing (UHeM), http://training.uybhm.itu.edu.tr/, Venue: ITU Ayazaga campus, Informatics Institute, Istanbul-Turkey, March 23, 2012.

16) **Seventh High Performance Computing and Parallel Programming Summer School**, Organized by National Center For High Performance Computing of Turkey (UHeM), Paralel Programming with MPI, Parallel Programming with OpenMP, Computational Chemistry, Computational Nanoscience and Basic Linux workshops, ITU Ayazaga campus, Istanbul-Turkey, June 11- 22, 2012.

17) **International Conference for Mathematical Methods in Fluid Dynamics and Simulation of Giant Oil and Gas Reservoirs**, Supported by SPE and SIAM, Istanbul-Turkey, Sept. 3-5, 2012.

18) Summer of HPC (SoHPC), PRACE Summer school held in ITU, **Simulation and visualization of bioflow in coronary arteries**, Hannes-Grimm Strele and Matteo Giacomini, Lecturers: Yağmur Gülkanat, Erke Arıbaş and Şenol Pişkin, Presentations, Mentor: M. Serdar CELEBI, Istanbul-Turkey, June-July 2013.

19) **Parallel Programming Training with CUDA ,** Organized by National Center For High Performance Computing of Turkey (UHeM), Supported by NVIDIA, ITU Ayazaga Campus, Istanbul-Turkey, June 10- 12, 2013.

20) **Introductory Level Parallel Programming Training with CUDA,** Organized by Informatics Institute, National Center For High Performance Computing of Turkey (UHeM), and NVIDIA Supported by DELL, ITU Ayazaga Campus, Istanbul-Turkey, October 10-11, 2013.

21) **Accelerating Large Scale CFD Analysis Using OpenFOAM on GPU's,** Organized by Informatics Institute, hosted by National Center For High Performance Computing of Turkey (UHeM), and collaborated with NVIDIA and FluiDyna, http://workshop.uybhm.itu.edu.tr/ Building of

Informatics Institute, 4th floor, ITU Ayazaga Campus, Istanbul-Turkey, January 23, 2014.

22) **The 1st Symposium on Multiscale, Multiphysics and Turbulent flow Simulations**, ICNAAM 12th International Conference of Numerical Analysis and Applied Mathematics, Rhodes-Greece, September 22-28, 2014.

23) **OpenFOAM Workshop**, Computational Fluid Dynamics and Biomechanics Research Groups @ Informatics Institute, Istanbul Technical University, Maslak-Istanbul, January 5-16, 2015.

24) **Linux System Administration and Network Training**, Computational Science and Engineering Division, Informatics Institute, Istanbul Technical University, Maslak-Istanbul, January 19-30, 2015.

25) **The 2nd Symposium on Multiscale, Multiphase, Multiphysics and Turbulent flow Simulations**, ICNAAM 15th International Conference of Numerical Analysis and Applied Mathematics, Thessaloniki-Greece, September 25-30, 2017.

Courses Given at ITU Informatics Institute and other Institutions

Current Courses

1) HBM513E Parallel and Distributed Computing
2) HBM514E Parallel Numerical Algorithms and Tools
3) HBM597E Special Topics in CSE
4) HBM697E Special Topics in CSE
5) HBM627E Guided Research
6) HBM601E Computational Geometry
7) HBM614E Advanced Numerical Methods in Fluids

Old Courses

1) IT201 Intermediate Programming
2) ISE102 Programming I
3) ISE103 Programming II
4) EST532B System Programming in Operating Systems
5) EST523B C++ and Object Oriented Programming
6) EST513B Introduction to Open Operating Systems
7) CS105 Introduction to Programming
8) EST566B Advanced Linux
9) HBM518B Discretized Methods: Boundary Element Method
10) GEM501F Numerical Techniques for Engineering Problems
11) HBM803E Object Oriented Programming Techniques
12) HBM516E Scientific Visualization
13) Bil104E Introduction to Scientific and Engineering Programming

14)Bil101E Introduction to Computer and Information Systems

International Committee memberships

1) PRACE Executive Board and Council member
2) PRACE AISBL Founding member

International Memberships

1) Member of ACM
2) Member of SIGHPC
3) Member of SIAM