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EDUCATION:

April 2001-March 2004	Ph.D.	Mechanical Engineering Swiss Federal Institute of Technology , Lausanne, SWITZERLAND (GPA: Excellent)
Jan 1999-July 2000	M.Sc.	Aerospace Engineering Georgia Institute of Technology , Atlanta, USA (GPA: 3.5:4.0)
April 1996-March 1998	M.Sc.	Mechanical Engineering Yokohama National University , Yokohama, JAPAN (GPA: 4.0:4.0)
Sept 1991-July 1995	B.Sc.	Aeronautical Engineering Istanbul Technical University , Istanbul, TURKEY (GPA: 8.4:10.0)
Sept 1993-July 1995	B.Sc.	Physics Engineering Istanbul Technical University , Istanbul, TURKEY (Double Majored)
Sept 1990-July 1991		English Preparing Istanbul Technical University , Istanbul, TURKEY

LANGUAGES:

Mother language is **Turkish**.
Foreign languages are **English, Japanese** and **French**.

COMPUTER SKILLS:

Operating Systems.....: **UNIX, DOS, Microsoft Windows**
Programming Languages.....: **Fortran 77/90, Basic, Pascal** and **C++**
CFD Grid Generation Programs : **Gridgen, GAMBIT, CUBIT**
CFD Post Processing Programs : **Tecplot, Fast, Fieldview, Gmsh, Paraview, Visit**
Analysis Programs.....: **FLUENT, IDEAS, ANSYS**
Libraries used on Parallel Mach.: **MPI** ([The Message Passing Interface Standard](#))
MUMPS ([MUltifrontal Massively Parallel Sparse Direct Solver](#))
AZTEC ([A Massively Parallel Iterative Solver Library](#))
PETSc ([Portable, Extensible Toolkit for Scientific Computation](#))
Experience on Parallel Mach.... : **ORIGIN 3800, Intel Cluster, IBM SP Cluster System**

HONORS:

Sept 1992-July 1995	Being awarded a scholarship from Scientific and Technical Research Council of Turkey .
July 1994-Sept 1994	Being awarded a scholarship from von Karman Institute for Fluid Dynamics for a short summer training program.
Jan 1996-Aug 1999	Being awarded a scholarship from Ministry of Japanese Education Culture and Sport (Monbusho).
2005-2006	Listed among the leading 3000 scientists and engineers in Marquis Who's Who in Science and Engineering (8th Edition).
2005-2006	Listed in Outstanding Scientists of the 21 st Century – Inaugural Edition by International Biographical Center, Cambridge, UK.

WORK EXPERIENCE:

Oct 2011-Present	Assoc. Prof. Istanbul Technical University, Department of Astronautical Engineering, Istanbul, TURKEY.
July 2009-Oct 2011	Assistant Prof. Istanbul Technical University, Department of Astronautical Engineering, Istanbul, TURKEY.
May 2007-Aug 2008	Research Assoc. University of Colorado at Boulder, Boulder, CO. Advisor Assoc. Prof. Kamran Mohseni at FLUID DYNAMICS LABORATORY of Department of Aerospace Engineering Sciences.
July 2005- Mar 2007	Post-Doctoral Research Assistant, University College London, London, UK. Advisor Dr. Helen J. Wilson at DEPARTMENT OF MATHEMATICS .
Apr 2001- Sept 2004	Graduate Research Assistant, Swiss Federal Institute of Technology, Lausanne SWITZERLAND. Advisor Prof. Robert G. Owens at FLUID MECHANICS LABORATORY of Mechanical Engineering.
Jan 1999- July 2000	Graduate Research Assistant, Georgia Institute of Technology, Atlanta, GA Advisor Prof. Lakshmi Sankar at COMPUTATIONAL AERODYNAMICS LABORATORY of School of Aerospace Engineering.
Aug 1993-Sept 1993	Summer Practice- TURKISH AEROSPACE INDUSTRIES , Ankara, TURKEY

PAPERS and PRESENTATIONS:

1. M. Sahin, "[Developing 3-D Holographic Particle Image Velocimetry](#)". von Karman Institute for Fluid Dynamics, Brussel, BELGIUM, 4 July - 2 September 1994.
2. M. Sahin and K. Kamemoto, "[A High Speed Panel Method for Solution of The Full Potential Equation around Airfoils](#)". 11th Computational Fluid Dynamic Symposium, Tokyo, JAPAN, 18-20 December 1997.
3. M. Sahin and K. Kamemoto, "[A Fast Higher-Order Integral Equation Method for Solution of the Full Potential Equation around Airfoils](#)". BEM13th Boundary Element Symposium, Paris, FRANCE, 27-30 May 1998.
4. M. Sahin, L. N. Sankar, M. S. Chandrasekhara and C. Tung, "[Dynamic Stall Alleviation using a Deformable Leading Edge Concept - A Numerical Study](#)". AIAA 2000-0520, 38th Aerospace Science Meeting & Exhibit, Reno, Nevada, USA, 10-13 January 2000.
5. M. Sahin and L. N. Sankar, "[Stall Alleviation using a Deformable Leading Edge Concept](#)". IEEE Aerospace Conference, Big Sky, Montana, USA, 18-25 March 2000.
6. L. N. Sankar and M. Sahin, "[Dynamic Stall Simulations](#)". Semiannual Meeting of the US/French MOA, NASA Ames Research Center, Moffett Field, California, USA, 28 April 2000.
7. L. N. Sankar, M. Sahin and N. Gopal, "[Dynamic Stall Characteristics of Dropped Leading Edge Airfoils](#)". NASA Technical Reports, January 2000.
8. M. Sahin and R. G. Owens, "[A Numerical Investigation of the Effect of Elasticity on the Stability of Inertial Viscoelastic Flows](#)". XIIIth International Workshop on Numerical Methods for non-Newtonian Flows, Lausanne, SWITZERLAND, 4-7 June 2003.
9. M. Sahin and R. G. Owens, "[A Numerical Investigation of the Wall Effects on Flow Past a Confined Circular Cylinder](#)". ICIAM 2003 5th International Congress on Industrial and Applied Mathematics, Sydney, AUSTRIA, 7-11 July 2003.

10. M. Sahin and H. J. Wilson, "[A Semi-Staggered Dilation-Free Finite Volume Method for the Numerical Solution of Viscoelastic Fluid Flows on all-Hexahedral Elements](#)". 3rd Annual European Rheology Conference (AERC), Crete, GREECE, 27-29 April 2006.
11. M. Sahin and H. J. Wilson, "[A Parallel Adaptive Unstructured Finite Volume Method for Linear Stability \(Normal Mode\) Analysis of Viscoelastic Fluid Flows](#)". XVth International Workshop on Numerical Methods for non-Newtonian Flows, Rhodes, GREECE, 6-10 June 2007.
12. M. Sahin and K. Mohseni, "[Direct Numerical Simulation of Low Reynolds Number Separated Flow around an Eppler 387](#)". APS - 60th Annual Meeting of the Division of Fluid Dynamics, Salt Lake City, Utah, USA, 18-20 November 2007.
13. M. Sahin, K. Mohseni, and K. Hillewaert, "[Direct Numerical Simulation of Separated Low-Reynolds Number Flows around an Eppler 387 Airfoil](#)". 46th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, 7-10 January 2008, AIAA-2008-422.
14. M. Sahin and K. Mohseni, "[The Numerical Simulation of Flow Patterns Generated by the Hydromedusa *Aequorea Victoria* using an Arbitrary Lagrangian-Eulerian Formulation](#)". 38th Fluid Dynamics Conference and Exhibit, Seattle, Washington, USA, 23-26 June 2008, AIAA-2008-3715.
15. D. G. Hassell, R. M. Mackley, M. Sahin and H. J. Wilson, "[Experimental and Computational Identification of a Polymer Melt Flow Instability](#)". The XVth International Congress on Rheology, Monterey, California, USA, 3-8 August 2008.
16. T. Reis, M. Sahin and H. J. Wilson, "[Co-Extrusion Instabilities Modeled with a Single Fluid](#)". The XVth International Congress on Rheology, Monterey, California, USA, August 3-8, 2008.
17. M. Sahin, "[A Stable Unstructured Finite Volume Method for Parallel Large-Scale Viscoelastic Fluid Flow Calculations](#)". XVIth International Workshop on Numerical Methods for non-Newtonian Flows, Northampton, USA, 13-15 June 2010.
18. M. Sahin, "[A Stable Unstructured Finite Volume Method with Multigrid for Parallel Large-Scale Incompressible Viscous Fluid Flow Computations](#)". 40th Fluid Dynamics Conference and Exhibit, Chicago, USA, 28 June-1 July 2010, AIAA-2010-5096.
19. M. Sahin, "[Parallel Large-Scale Computation of an Oldroyd-B Fluid Past a Confined Circular Cylinder in a Rectangular Channel using an Unstructured Finite Volume Method](#)". APS – 63rd Annual Meeting of the Division of Fluid Dynamics, Long Beach, California, USA, 21-23 November 2010.
20. M. Sahin, "[A Stable Unstructured Finite Volume Method with Multigrid for Parallel Large-Scale Incompressible Viscous Fluid Flow Computations](#)". 49th AIAA Aerospace Science Meeting, Orlando, Florida, USA, 4-7 January 2011, AIAA 2010-5096.
21. M. Sahin, "[Three-Dimensional Viscoelastic Fluid Flow Instabilities for the Oldroyd-B Fluid Past a Confined Circular Cylinder in a Rectangular Channel](#)". 16th International Conference on Finite Elements in Flow Problems, Munich, GERMANY, 23-25 March 2011 (sponsored by TUBITAK 2224 program).
22. B. Erzincanli and M. Sahin, "[A Stable Unstructured Finite Volume Method with Arbitrary Lagrangian-Eulerian Formulation for the Numerical Simulation of Insect Flight](#)". 41th Fluid Dynamics Conference and Exhibit, Honolulu, Hawaii, USA, 27-30 June 2011, AIAA-2011-3897.
23. M. Sahin, "[Parallel Large-Scale Calculations of Viscoelastic Fluid Flow Instabilities](#)". 6th Ankara International Aerospace Conference, 14-16 September 2011, AIAC-2011-144.
24. T. Reis, M. Sahin and H. Wilson, "[Linear Instabilities in Channel Flows with Constrictions: Two Distinct Elastic Instabilities](#)". The Society of Rheology 83rd Annual Meeting, Cleveland, Ohio, USA, 9-13 October 2011.
25. A. Eken and M. Sahin, , "[Large-Scale Numerical Simulation of Fluid Structure Interactions in Low Reynolds Number Flows](#)". APS – 64th Annual Meeting of the Division of Fluid Dynamics, Baltimore, Maryland, USA, 20-22 November 2011.

JOURNALS:

1. M. Sahin and K. Kamemoto, "[A Fast Higher-Order Integral Equation Method for Solution of the Full Potential Equation around Airfoils](#)". *International Journal of Engineering Analysis with Boundary Elements* 24:441-445, (2000).

2. M. Sahin, L. N. Sankar, M. S. Chandrasekhara and C. Tung, "[Dynamic Stall Alleviation using a Deformable Leading Edge Concept - A Numerical Study](#)". *AIAA Journal of Aircraft* 40:77-85, (2003).
3. M. Sahin, "[Solution of the Incompressible Unsteady Navier-Stokes Equations only in Terms of the Velocity Components](#)". *International Journal of Computational Fluid Dynamics* 17:199-203, (2003).
4. M. Sahin and R. G. Owens, "[A Novel Fully-Implicit Finite Volume Method Applied to the Lid-Driven Cavity Problem. Part I. High Reynolds Number Flow Calculations](#)". *International Journal for Numerical Methods in Fluids* 42:57-77, (2003).
5. M. Sahin and R. G. Owens, "[A Novel Fully-Implicit Finite Volume Method Applied to the Lid-Driven Cavity Problem. Part II. Linear Stability Analysis](#)". *International Journal for Numerical Methods in Fluids* 42:79-88, (2003).
6. M. Sahin and R. G. Owens, "[A Numerical Investigation of Wall Effects up to High Blockage Ratios on Two-Dimensional Flow Past a Confined Circular Cylinder](#)". *Physics of Fluids* 16:1305-1320, (2004).
7. M. Sahin and R. G. Owens, "[On the Effects of Viscoelasticity on Two-Dimensional Vortex Dynamics in the Cylinder Wake](#)". *Journal of non-Newtonian Fluid Mechanics* 123:121-139, (2004).
8. M. Sahin, "[A Preconditioned Semi-Staggered Dilation-Free Finite-Volume Method for the Incompressible Navier-Stokes Equations on all-Hexahedral Elements](#)". *International Journal for Numerical Methods in Fluids* 49:959-974, (2005).
9. M. Sahin and H. J. Wilson, "[A Semi-Staggered Dilation-Free Finite Volume Method for the Numerical Solution of Viscoelastic Fluid Flows on all-Hexahedral Elements](#)". *Journal of non-Newtonian Fluid Mechanics* 147:79-91, (2007).
10. M. Sahin and H. J. Wilson, "[A Parallel Adaptive Unstructured Finite Volume Method for Linear Stability \(Normal Mode\) Analysis of Viscoelastic Fluid Flows](#)". *Journal of non-Newtonian Fluid Mechanics* 155:1-14, (2008).
11. D. G. Hassel, M. R. Mackley, M. Sahin, H. J. Wilson, O. G. Harlen and T. C. B. McLeish, "[Experimental and Computational Identification of a Polymer Melt Flow Instability](#)". *Physical Review E*, **77**, 050801-R, (2008).
12. D. G. Hassel, M. R. Mackley, M. Sahin, H. J. Wilson, O. G. Harlen and T. C. B. McLeish, "[Experimental and Computational Identification of a Polymer Melt Flow Instability](#)". It has been selected for the June 1, 2008 issue of *Virtual Journal of Biological Physics Research* by the American Physical Society and the American Institute of Physics.
13. M. Sahin and K. Mohseni, "[An Arbitrary Lagrangian-Eulerian Formulation for the Numerical Simulation of Flow Patterns Generated by the Hydromedusa *Aequorea Victoria*](#)". *Journal of Computational Physics* 228:4588-4605, (2009).
14. M. Sahin, K. Mohseni and S. Colin, "[The Numerical Comparison of Flow Patterns and Propulsive Performances for the Hydromedusae *Sarsia Tubulosa* and *Aequorea Victoria*](#)". *Journal of Experimental Biology* 212:2656-2667, (2009).
15. M. Sahin, "[Parallel Large-Scale Incompressible Viscous Fluid Flow Computations: A Stable Unstructured Finite Volume Method with Multigrid](#)". (submitted).
16. M. Sahin, "[A Stable Unstructured Finite Volume Method for Parallel Large-Scale Viscoelastic Fluid Flow Calculations](#)". *Journal of non-Newtonian Fluid Mechanics* 166:779-791, (2011).

INVITED TALKS:

A Parallel Adaptive Unstructured Finite Volume Method for Linear Stability (Normal Mode) Analysis of Viscoelastic Fluid Flows. McGill University, Montreal, CANADA, 27 November 2009.

The Challenges for Parallel Large-Scale Viscoelastic Fluid Flow Calculations. International Nathigali Summer College, PAKISTAN, 6 July 2010.

The Numerical Simulation of Flow Patterns Created by a Free-Swimming Jellyfish. International Nathigali Summer College, PAKISTAN, 7 July 2010.

A Parallel Adaptive Unstructured Finite Volume Method for the Linear Stability Analysis of Non-Newtonian Fluid Flows. Koc University, Istanbul/TURKEY, 8 December 2010.

B.Sc. STUDENT PROJECTS

E. Eyduran, Direct numerical simulations around low Reynolds number airfoils, (2010).
S. Karaca, An integral equation method for the solution of the three-dimensional Stokes flow (2011).

Ph.D. STUDENT PROJECTS

B. Erzincali, An arbitrary Lagrangian-Eulerian (ALE) formulation for the numerical solution of the insect flight, 2010-Present.
A. Eken, Fluid-structure interaction modeling of membrane-wing micro air vehicles, 2011- Present, (Co-advisor).
S. B. Yücel, Investigation of flapping wing interaction with a downstream object, 2011-Present, (Co-advisor).
E. Öner, An adaptive unstructured flow solver for rotorcraft aerodynamics, 2011-Present.

PROJECTS:

A Stable Unstructured Finite Volume Method with Arbitrary Lagrangian-Eulerian Formulation for the Numerical Simulation of Insect Flight. Supported by [Scientific and Technical Research Council of Turkey](#) (TUBITAK-1001).

COURSES GIVEN:

MAT202E	Numerical Methods
UZF218E	Partial Differential Equations
UUM535	Engineering Mathematics
UUT514E	Computational Fluid Dynamics
UTT619E	Advanced Computational Fluid Dynamics

REFEREED JOURNALS:

ASME Journal of Fluids Engineering
Computers & Fluids
Energy Conversion and Management
Engineering Applications of Computational Fluid Mechanics
Industrial & Engineering Chemistry Research
International Journal for Numerical Methods in Fluids
International Journal of Computational Methods
International Journal of Heat and Mass Transfer
Journal of Polymer Engineering
Plastics, Rubber and Composites
Theoretical and Computational Fluid Dynamics
Turkish Journal of Engineering and Environmental Sciences

MEMBERSHIPS:

American Institute of Aeronautics and Astronautics (AIAA)
American Physical Society (APS)
The European Society of Rheology (ESR)

REFERENCES:

Robert G. OWENS (Ph.D. Advisor, Current Address)
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