

# Mahmut BİLGEHAN



## CONTACT INFORMATION

Girne American University  
Faculty of Engineering, Dept. of Civil Engineering  
University Drive, PO Box 5, 99428 Karmi Campus,  
Karaoglanoglu, Kyrenia / TRNC  
T: +90 392 650 2000  
F: +90 392 650 2062  
E: mahmutbilgehan@gau.edu.tr,  
mahmutbilgehan@gmail.com

## PERSONAL INFORMATION

Marital Status : Married  
Nationality : Turkish  
Affiliation : Girne American University

## RESEARCH INTERESTS

Destructive and Non-destructive Testing Methods of Materials and Evaluation; Repairing and Strengthening of Reinforced Concrete and Masonry Structures; Softwares on Computer Aided Drawings (AutoCAD, Sketch-up, etc.); Softwares on Structural Analysis (SAP2000, ideCAD, Sta4CAD, Probrina, etc.); Behavior of Reinforced Concrete Structural Elements Exposed to High Temperature; Determination of Seismic Safety of Buildings; Modeling with Artificial Neural Networks; Modeling with Genetic Algorithms; Modeling with Fuzzy Logic.

## EDUCATION

### GRADUATE

PhD

Fuzzy Logic Approach for Seismic Safety Evaluation of Buildings. Supervisor: Prof.Dr. Melike ALTAN, Istanbul Technical University, 2004.

MSc

Fuzzy Logic Approach in Truss-Beam Analogy for Reinforced Concrete Beams. Supervisor: Prof.Dr. Abdussamet ARSLAN, Fırat University, 1996.

BSc

Fırat University, Faculty of Engineering, Dept. of Civil Engineering, 1993.

GRAD THESIS SUPERVISED

PhD

Ahmet Emin KURTOĞLU, “Punching Shear Capacity of Two-way Slabs Reinforced with Glass Fiber Reinforced Polymer (GFRP) Rebar”, 2012-2016.

Cemil AKDENİZ, “Applications of Geographic Information Systems in Construction Management”, 2015-...

MSc

Mihriban KARAMANOĞLU, “Artificial Neural Networks and Neuro-Fuzzy Approaches in Prediction of the Moment Capacity of Reinforced Concrete Slabs in High Temperature”, 2007-2010.

Muhammed Raşit GÜNEŞ, “Nonlinear Behavior and Analysis of Reinforced Concrete Structural Systems”, 2008-2011.

Abba Wada ABDULLAHI, “Behavior of Prestressed RC Elements Exposed to High Temperature”, 2012-2014.

Aliyu Abba ALIYU, “Using Fiber Reinforced Polymer (FRP) Composites in Bridge Structures”, 2012-2014.

Hawkar Ibrahim SALIH, “Improvement of Fracture Behavior of Fiber Reinforced Concrete”, 2013-...

## AWARDS AND HONORS

Plaque of Appreciation given by The Ministry of National Defense of Turkey, Department of Construction and NATO Infrastructure, Earthquake Research Group (DAG) Command (2005).

Plaque of Appreciation given by the Turkish General Staff (2005).

Plaque of Appreciation given by Batman Branch of Chamber of Civil Engineers (2007).

Plaque of Contribution to Technical Education given by Directorate of National Education of Şanlıurfa (2008).

Award to Encourage the Publication for some articles published in different international scientific journals given by TUBITAK (2010-...).

## SEMINARS

Education seminar given for Gaziantep Branch of Chamber of Civil Engineers (2015).

Education seminar given for Şanlıurfa Branch of Chamber of Civil Engineers (2008).

Education seminar given for Batman Branch of Chamber of Civil Engineers (2007).

## DESIGN AND CONSULTING EXPERIENCES

- World Hospital, Şanlıurfa, Turkey.
- Building of Kapaklı Office Block, Şanlıurfa, Turkey.
- Old Building of Faculty of Economics in Harran University, Şanlıurfa, Turkey.
- Polyclinic Building of Harran University, Şanlıurfa, Turkey.
- Transmitter Station of TRT, Adıyaman, Turkey.
- Buildings of Faculty of Medicine of Harran University in Osmanbey Campus, Şanlıurfa, Turkey.
- Building of 11 Nisan in Bahçelievler, Şanlıurfa, Turkey.

- Building of Yeni İpek in Bahçelievler, Şanlıurfa, Turkey.
- Building of Evren in Yenişehir, A Part of The Social Housing, Şanlıurfa, Turkey.
- Özlek Mosque in Yenişehir, Şanlıurfa, Turkey.
- Yeni Arabi Mosque in Bamyasuyu, Şanlıurfa, Turkey.
- Building of Eriş YK in Karaköprü, Şanlıurfa, Turkey.
- The Ministry of National Defense of Turkey, Alanya Guest House of Department of Military, Antalya, Turkey.
- The Lodging houses of The Turkish Air Force Commander, Eskişehir, Turkey.
- The Buildings of Turkish Naval Forces Command Headquarters, Turkish Republic of North Cyprus.
- The Command Manor, Turkish Land Forces Command, Elazığ, Turkey.
- Army House in Adana, Turkish Land Forces Command, Adana, Turkey.
- Port Construction of NATO, Mersin, Turkey.
- Sergeant Lodging Houses, Mersin, Turkey.
- The Buildings of 1st Gendarmerie Commando Brigade, Şırnak, Turkey.
- Technical Reports about Open and Closed Blasting in Mine and Quarry, Gaziantep and Surrounding Provinces, Turkey.
- Advisory of Strengthening Projects of Şanlıurfa Youth Center, Şanlıurfa, Turkey.
- Strengthening Projects Consultancy of Adıyaman State Hospital, Adıyaman, Turkey.
- Strengthening Projects Consultancy of Çelikhan State Hospital, Adıyaman, Turkey.

## COURSES GIVEN

## UNDERGRAD COURSES

- Statics
- Strength of Materials I
- Strength of Materials II
- Reinforced Concrete Fundamentals
- Reinforced Concrete Structures
- Reinforced Concrete and Project

- Dynamics of Structures
- Earthquake Resistant Design
- Earthquake Design of Structures
- Computer Applications in Structural Engineering
- Computer Aided Design
- Numerical Analysis
- Materials of Construction
- Construction Engineering and Management
- Senior Design Project

#### GRAD COURSES

- Principles of Fuzzy Modeling in Engineering
- Genetic Algorithms Modeling in Engineering
- Optimization Methods
- Optimization Techniques in Engineering
- Nondestructive Testing and Evaluation
- Design of Prefabricated Structure
- Statistical Methods in Engineering
- Theory of Plates
- Theory of Shells

MEMBERSHIP OF  
CONFERENCE  
ORGANIZATION COMMITTEE

GAP 5th Engineering Congress, 26-28 April  
2006, Harran University, Şanlıurfa, Turkey.

MEMBERSHIP OF  
CONFERENCE  
SCIENTIFIC COMMITTEE

2nd Turkish Conference on Earthquake  
Engineering and Seismology TDMSK-2013  
September 25-27, 2013, Antakya, Hatay, Turkey.

Symposium on Modern Methods in Science-  
BMYS2010, 14-16 Oct. 2010, Dicle University,  
Diyarbakır, Turkey.

GAP 5th Engineering Congress, 26-28 Apr. 2006,  
Harran University, Şanlıurfa, Turkey.

CHAIRMANSHIP OF  
CONFERENCE SESSION

Symposium on Modern Methods in Science-  
BMYS2010, 14-16 Oct. 2010, Dicle University,  
Diyarbakır, Turkey.

REVIEWER OF  
INTERNATIONAL JOURNALS

Computers & Concrete (*SCI*)  
Smart Structures and Systems (*SCI*)  
Advances in Engineering Software (*SCI*)  
Neural Computing and Applications (*SCI*)  
International Journal of the Physical Sciences (*SCI*)  
Mechanics of Advanced Materials and Structures  
(*SCI*)  
Electronic Journal of Construction Technologies  
New World Sciences Academy  
Artificial Intelligence Research  
Ain Shams Engineering Journal

PUBLICATIONS

ARTICLES PUBLISHED IN PEER-REVIEWED  
JOURNALS

1. Kurtoğlu, A.E., Çevik, A., Albegmprli, H.M., Gülşan, M.E., **Bilgehan M.**, “Reliability-Based Modeling of Punching Shear Capacity of FRP-Reinforced Two-Way Slabs”, Computers and Concrete, DOI:10.12989/cac.2016.17.1.087, 17(1), 87-106, 2016.
2. **Bilgehan, M.**, Kurtoğlu, A.E., “ANFIS-based Prediction of Moment Capacity of Reinforced Concrete Slabs Exposed to Fire”, Neural Computing and Applications, DOI:10.1007/s00521-015-1902-3, 2015.
3. Çevik, A., Kurtoğlu, A.E., **Bilgehan, M.**, Gülşan, M.E. & Albegmprli, H.M., “Support Vector Machines in Structural Engineering: A Review”, Journal of Civil Engineering and Management, 21:3,261-281, DOI:10.3846/13923730.2015.1005021, WOS:000350032200001, 2015.
4. Kurtoğlu, A.E., Çevik, A., **Bilgehan, M.**, “GP-based Prediction for Punching Shear Capacity of

FRP-reinforced Two-way Slabs". International Journal of Technical Research and Applications. e-ISSN:2320-8163, Volume-2, Special Issue 6, pp. 01-06, 2014.

5. **Bilgehan, M.**, Gürel, M.A., Pekgökgöz, R.K., Kısa, M., "Buckling Load Estimation of Cracked Columns using Artificial Neural Network Modeling Technique", Journal of Civil Engineering and Management, 18:4, 568-579, 2012.
6. **Bilgehan, M.**, "Comparison of ANFIS and NN Models — With a Study in Critical Buckling Load Estimation", Applied Soft Computing, 11(4), 3779-3791, 2011.
7. **Bilgehan, M.**, "A Comparative Study for the Concrete Compressive Strength Estimation using Neural Network and Neuro-Fuzzy Modelling Approaches", Nondestructive Testing and Evaluation, 26(1), 35-55, 2011.
8. **Bilgehan, M.**, Turgut, P., "Artificial Neural Network Approach to Predict Compressive Strength of Concrete through Ultrasonic Pulse Velocity", Research in Nondestructive Evaluation, 21, 1-17, 2010.
9. **Bilgehan, M.**, Turgut, P., "The Use of Neural Networks in Concrete Compressive Strength Estimation", Computers and Concrete, 7(3), 271-283, 2010.
10. Yenigün, K., **Bilgehan, M.**, Gerger, R., Mutlu, M., "A Comparative Study on Prediction of Sediment Yield in the Euphrates Basin", International Journal of Physical Sciences, 5(5), 518-534, 2010.
11. Karadağ, R., **Bilgehan, M.**, "The Investigating of Heat Convection in Floor Heating Systems of Buildings by using Artificial Neural Networks", Journal of Engineer and Machinery, 52(615), 83-90, 2011.
12. **Bilgehan, M.**, Gürel, M. A., Pekgökgöz, R. K., Kısa, M., "Analysis of Buckling Problem of the Cracked Compression Rods using Transfer Matrix Method and Artificial Neural Networks", New World Sciences Academy-Engineering Sciences, 6(1), 62-70, 2011.
13. Karamanoğlu, M., **Bilgehan, M.**, "Estimation of the Ultimate Capacity of R/C Slabs Exposed to High Temperature using the Neuro-Fuzzy

Method", New World Sciences Academy-Engineering Sciences, 6(2), 611-619, 2011.

14. Pekkökgöz, R.K., Gürel, M.A., **Bilgehan, M.**, Kısa, M., "Active Suspension of Cars using Fuzzy Logic Controller Optimized by Genetic Algorithm", International Journal of Engineering and Applied Sciences (IJEAS), 2(4), 27-37, 2010.
15. Pekkökgöz, R.K., Gürel, M.A., **Bilgehan, M.**, Çılı, F., "Cost Analysis of a Building with Seismic Base Isolation System", Sigma-Journal of Engineering and Natural Sciences, 25(3), 236-246, 2007.
16. **Bilgehan, M.**, Altan, M., Pekkökgöz, R.K., "The Evaluation of Seismic Safety of Reinforced Concrete Buildings by using FEMA-310", KSU., Journal of Science and Engineering, 10(1), 24-35, 2007.
17. **Bilgehan, M.**, Altan, M., "Fuzzy logic approach for damage assessment of seismic damaged buildings", Journal of ITU-D series, 4(2), 43-52, 2005.
18. **Bilgehan, M.**, Altan, M., "Determination of the Seismic Performance Index of R/C Buildings with Seismic Index Method by using Fuzzy Logic", SÜ., Journal of Technical Online, 4(2), 96-110, 2005.

#### CONFERENCE PAPERS

1. Kurtoglu, A.E., Cevik, A., **Bilgehan, M.**, "GP-based Prediction for Punching Shear Capacity of FRP-reinforced Two-way Slabs", International Conference on Advances in Pure & Applied Sciences (Kuala Lumpur), Nov-Dec. 2014, pp. 01-06.
2. Kurtoglu, A.E., Cevik, A., **Bilgehan, M.**, "Effect of Soil and Material Characteristics on SSI of Concrete Structures". Asian Conference on Civil, Material and Environmental Sciences, 15-17 March 2013, Tokyo, Japan.
3. Kurtoglu, A.E., Cevik, A., **Bilgehan, M.**, "A Parametric Study: Effect of Soil and Material Characteristics on Seismic Behavior of Structures", 2nd Turkish Conference on Earthquake Engineering and Seismology – TDMSK. September 25-27, 2013, Hatay, Turkey.



4. Pekgökgöz, R.K., Gürel, M.A., **Bilgehan, M.**, “Ard germe uygulamasının betonarme minarelerin deprem davranışı üzerine etkisi”, Sakarya International Symposium of Earthquake Engineering (The Learning Outcomes of Marmara Earthquake in the First Decade), 1-2 October 2009, Sakarya, Turkey, 19-28.
5. Sivrikaya, O., **Bilgehan, M.**, “Approaches to Estimate Unconfined Compressive Strength of Cohesive Soils using Artificial Neural Networks”, International Symposium on INnovations in Intelligent SysTems and Applications - INISTA 2009, June 29 - July 1, 2009, Karadeniz Technical University, Trabzon, Turkey, 1-5.
6. Sivrikaya, O., Toğrol, E., **Bilgehan, M.**, “Estimating Undrained Shear Strength of Cohesive Soils by means of Artificial Neural Networks”, 7th International Congress on Advances in Civil Engineering, 11-13 October 2006, Yıldız Technical University, Istanbul, Turkey, 1-13.
7. **Bilgehan, M.**, Altan, M., “Earthquake Safety Assessment of Existing Reinforced Concrete Buildings based on Fuzzy Logic”, Proceedings of International Conference VSU’2005, 26-27 May 2005, Sofia, Bulgaria, pp. II-75-80.
8. **Bilgehan, M.**, Altan, M., “Fuzzy Logic Approach for Seismic Safety Evaluation of Reinforced Concrete Buildings”, International Conference on Earthquake Engineering in The 21st Century EE-21C, 27 August-1 September 2005, Skopje, Republic of Macedonia, Topic4 1-8.
9. Karamanoğlu, M., **Bilgehan, M.**, Sivrikaya, O., “Prediction of the moment capacity of reinforced concrete slabs in fire using neuro-fuzzy method”, Symposium on Modern Methods in Science, Proceedings of BMYS 2010, 14-16 Oct. 2010, The Congress Hall of Dicle University, Diyarbakır, Turkey.
10. **Bilgehan, M.**, Gürel, M. A., Pekgökgöz, R. K., Kısa, M., “Analysis of buckling problem of the cracked compression rods using transfer matrix method and artificial neural networks”, Symposium on Modern Methods in Science, Proceedings of BMYS 2010, 14-16 Oct. 2010, The Congress Hall of Dicle University, Diyarbakır, Turkey.
11. **Bilgehan, M.**, Sivrikaya, O., “Determination of undrained shear strength by means of artificial

neural network”, Proceedings of GAP 5th Engineering Congress, 26-28 Apr. 2006, Harran University, Şanlıurfa, Turkey, 1047-1054.

12. Pekgökgöz, R.K., Gürel, M.A., **Bilgehan, M.**, Kaya, N., “An investigation on the additional cost of seismic base isolation system to the total cost of buildings”, Proceedings of GAP 5th Engineering Congress, 26-28 Apr. 2006, Harran University, Şanlıurfa, Turkey, 867-873.
13. Sivrikaya, O., Toğrol, E., **Bilgehan, M.**, “Determination of undrained compressive strength (qu) using artificial neural network”, 10th National Congress on Soil Mechanics and Foundation Engineering, Proceedings of ZM10, 16-17 Sept. 2004, ITU, Istanbul, Turkey, 135-144.
14. Gençoğlu, M., **Bilgehan, M.**, Taşkın, B., “Bending Behavior of Steel-Fiber Reinforced Concrete”, Proceedings of GAP 4th Engineering Congress, 06-08 June 2002, Harran University, Şanlıurfa, Turkey, 1012-1018.
15. **Bilgehan, M.**, Altan, M., “Optimum Design of reinforced concrete beam and column with genetic algorithm”, Symposium on Modern Methods in Engineering, Proceedings of MMYs’2001, 26-28 Sept. 2001, ITU, Istanbul, Turkey, 193-200.
16. **Bilgehan, M.**, Demir, C., “Fuzzy logic and structural engineering”, Proceedings of GAP 1st Engineering Congress, 29 May-1 June 1996, Harran University, Şanlıurfa, Turkey, 704-710.
17. Demir, C., **Bilgehan, M.**, “Artificial intelligence and its applications”, Proceedings of GAP 1st Engineering Congress, 29 May-1 June 1996, Harran University, Şanlıurfa, Turkey, 711-716.

#### OTHER PUBLICATION

1. GAP 5th Engineering Congress, *Editors:* Gerger, R., Yenigün, K., **Bilgehan, M.**, Bulut, H., Yeşilnacar, İ., 26-28 April 2006, Harran University, Şanlıurfa, Turkey.

PROFESSIONAL  
MEMBERSHIP

TMMOB Chamber of Civil Engineers

COMMUNICATION  
LANGUAGE

Turkish, English