

BERTUĞ AKINTUĞ

CONTACT INFORMATION

- **Address:**

Middle East Technical University,
Northern Cyprus Campus,
Civil Engineering Program,
Kalkanlı, Güzelyurt,
North Cyprus.

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EDUCATION

- **PhD** **2000 – 2006**
Civil Engineering, University of Manitoba, Canada.
Dissertation Title: *Analysis of System Drought for Manitoba Hydro Using Stochastic Methods.*
 - **MSc.** **1995 - 1997**
Civil Engineering, Eastern Mediterranean University, North Cyprus.
Dissertation Title: *Drought Analysis of North Cyprus by Palmer Drought Severity Index.*
 - **BEng.** **1986 - 1991**
Civil Engineering, Eastern Mediterranean University, North Cyprus.
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EMPLOYMENT

- **Assist. Prof. Dr.** **Jun. 2009 – Present**
Middle East Technical University, Northern Cyprus Campus.
 - **Instructor, Dr.** **Sep. 2006 – May 2009**
Middle East Technical University, Northern Cyprus Campus.
 - **Water Resources Engineer** **Jun. 2005 – Jul. 2006**
KGS Group, Winnipeg, Manitoba, Canada.
 - **Research / Teaching Assistant** **Feb. 2002 – May 2005**
University of Manitoba, Winnipeg, Manitoba, Canada.
 - **Water Resources Engineer** **Jan. 2001 – Jan. 2002**
Manitoba Hydro, Winnipeg, Manitoba, Canada.
 - **Research / Teaching Assistant** **Sep. 1995 – Feb. 2000**
Eastern Mediterranean University, North Cyprus.
 - **Construction (Site) Engineer** **Jul. 1991 – Aug. 1995**
Emek Construction Co. Ltd, North Cyprus
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ADMINISTRATIVE EXPERIENCE

- **Academic Advisor**
Construction and Technical Services Department
Middle East Technical University, Northern Cyprus Campus. **Sept. 2021 – Present**
 - **Program Coordinator**
Civil Engineering Program
Middle East Technical University, Northern Cyprus Campus. **Jun. 2014 – Present**
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TEACHING EXPERIENCE

- **Assist. Prof. Dr.**
Middle East Technical University, Northern Cyprus Campus **Jun. 2009 – Present**
Teaches following civil engineering courses:
 - Engineering Hydrology
 - Hydromechanics
 - Water Resources Engineering
 - Urban Hydrology and Hydraulics
 - Statistical Methods in Hydrology
 - Sustainable Water Resources (Graduate course)
 - Surveying
 - **Instructor, Dr**
Middle East Technical University, Northern Cyprus Campus **Sep. 2006 – May 2009**
Taught variety of civil engineering and social sciences courses such as
 - Engineering Hydrology,
 - Hydromechanics,
 - Materials of Construction,
 - Surveying,
 - Probability and Statistics in Civil Engineering
 - Statistics for Social Sciences,
 - Mathematics for Social Sciences,
 - Calculus and Analytic Geometry.
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ENGINEERING EXPERIENCE

- **Water Resources Engineer**
KGS Group, Winnipeg, Manitoba, Canada. **June 2005 – July 2006**
Worked as a specialized water resources engineer on the variety of water resources and municipal infrastructure projects across Canada and US such as
 - Culvert Design
 - Storm Water Design,
 - Hydrologic-Hydraulic Design and Analysis,
 - Dam Break Analysis,
 - Reservoir Simulation Analysis,
 - Stochastic Modeling,
 - River System Modeling,
 - Flood and Drought Frequency Analysis;
 - Channel / Reservoir Routing.

- **Water Resources Engineer, Contractor**
Manitoba Hydro, Winnipeg, Manitoba, Canada. **Jan. 2001 – Jan. 2002**
Completed a project entitled “*Frequency Analysis of Energy Drought*” to the Resource Planning and Market Analysis Department of Manitoba Hydro. This project has been conducted in-house at Manitoba Hydro. During this project:
 - Analyzed streamflow data of Nelson and Churchill River Basins,
 - Developed and calibrated spatial scale stochastic model for Manitoba Hydro’s system,
 - Generated synthetic streamflow data using multivariate stochastic models,
 - Developed reservoir regulation models for the Lake Winnipeg and Southern Indian Lake,
 - Developed the drought simulation model for the system, and
 - Analyzed the return period of Manitoba Hydro’s critical drought event.
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RESEARCH EXPERIENCE

VISITING RESEARCHER

- Hafencity University, Hamburg, Germany. **July 1st – August 31st 2014.**
 - Adaptation of Urban Areas to Climate Change – Sustainable Stormwater Management

RESEARCH PROJECTS

- **Project Coordinator**, “*Numerical Modelling of Güzelyurt Aquifer*” (Campus Research Fund: BAP FEN-16-K-9). **2016- 2019**
 - **Project Coordinator**, “*Development of Flood Management for Nicosia*” (Campus Research Fund: BAP FEN-15-D-2). **2015- 2019**
 - **Project Coordinator**, “*Drought Analysis of North Cyprus*” (Campus Research Fund: BAP FEN-14-O-6). **2014- 2016**
 - **Project Coordinator**, “*Investigation of Applicability of Stormwater Management Practices in the Town of Guzelyurt*” (Campus Research Fund: BAP FEN-13-YG-5). **2012-2017.**
 - **Project Coordinator**, “*Development of a Conceptual Model of Guzelyurt Aquifer using GIS*” (Campus Research Fund: BAP FEN-13-D-8). **2013 – 2015.**
 - **Project Coordinator**, “*Solid Waste Management of Middle East Technical University, Northern Cyprus Campus*” (Campus Research Fund: BAP FEN-12-O-4). **2012- 2014**
 - **Project Coordinator**, “*Development of a Flood Protection Project for Guzelyurt Region*” (Campus Research Fund: BAP FEN-11-D-5). **2011-2013.**
 - **Project Coordinator**, “*Trend Analysis of Precipitation and Temperature in North Cyprus*” (Campus Research Fund: BAP FEN-11-O-6). **2011-2012.**
 - **Project Coordinator**, “*Modeling of Bostanci-Guzelyurt Flood and Identification of Flood Risk Areas in Guzelyurt Region*” (Campus Research Fund: BAP FEN-15). **2010- 2011.**
 - **Researcher**, “*Integrating Uncertainty into the Assessment of Hydrologic Drought Frequency*” (Natural Sciences and Engineering Research Council of Canada). **2000-2005.**
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THESIS SUPERVISION / CO-SUPERVISION

Supervisor:

- MSc Thesis: *Rainwater Harvesting Analysis of Northern Cyprus* by Mustafa Ruso. **Completed in 2021.**
- MSc Thesis: *Time Series Modeling of Drought Frequency Analysis of Annual Rainfall for North Cyprus* by Nazlıcan Yücel. **Completed in 2021.**
- MSc Thesis: *Evaporation Analysis of North Cyprus* by Berkay Koyuncu. **Completed in 2019.**
- MSc Thesis: *Analysis of Drought Events in North Cyprus* by Sana Khan. **Completed in 2019.**
- MSc Thesis: *Analysis of Teleconnection Patterns in Climate of Northern Cyprus* by Hope N. Nabango. **Completed in 2019.**
- MSc Thesis: *Investigation of Applicability of Water Sensitive Urban Design Techniques in Güzelyurt, Northern Cyprus* by Elham Jahani, **Completed in 2017.**
- MSc Thesis: *Drought Analysis of North Cyprus* by Selen Çakal. **Completed in 2016.**
- MSc Thesis: *Assessing the Potential for Rain Water Harvesting in Middle East Technical University, Northern Cyprus Campus* by Rayaan Harb. **Completed in 2015.**
- MSc Thesis: *Sustainable Solid Waste Management of Middle East Technical University, Northern Cyprus Campus* by Cemeliye Özverel. **Completed in 2014.**
- MSc Thesis: *Annual and Seasonal Trend Patterns of Climate Change in North Cyprus* by Rahme Seyhun. **Completed in 2013.**

Co-Supervisor:

- MSc Thesis: *Quantity, Quality, and Policy Analysis of North Cyprus Water Resources for a Sustainable Management* by Adnan Yaser Adnan Hilal. **Completed in 2021.**
- PhD Thesis: *Flood Management in North Cyprus*. Civil Engineering Department, Middle East Technical University, Ankara. PhD Thesis. Hasan Zaifoğlu. **Completed in 2018.**
- MSc Thesis: *Development of Numerical Model for Güzelyurt Aquifer*. Environmental Engineering Department, Middle East Technical University, Ankara. MSc Thesis. Cansu Demir. **Completed in 2018.**
- MSc Thesis: *Development of a Conceptual Model of Guzeyurt Aquifer using GIS*. Environmental Engineering Department, Middle East Technical University, Ankara. MSc Thesis. Debebe Fanta **Completed in 2014.**
- MSc Thesis: *Development of a Flood Protection Project for Guzeyurt Region*. Civil Engineering Department, Middle East Technical University, Ankara. MSc Thesis. Erdal Şahin. **Completed in 2012.**

PROFESSIONAL AND SCIENTIFIC MEMBERSHIP

- International Association of Hydrological Sciences (IAHS).
 - The Chamber of Civil Engineers of the Union of the Chambers of Cyprus Turkish Engineers and Architects.
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COMPUTER SKILLS

- **Language:**
 - MATLAB
 - FORTRAN
 - **Software:**
 - HEC-SSP (Statistical Software Package)
 - HEC-HMS (Hydrologic Modeling System),
 - HEC-RAS (River Analysis System),
 - EPA-SWMM (Storm Water Management Model),
 - HY-8 (Culvert Hydraulic Analysis Program),
 - SPSS (Data Mining, Statistical Analysis Software),
 - S-PLUS (Data analysis and statistical data mining software),
 - FLDWAV (Flood Wave Model – Flood Forecasting and Dam Break Analysis),
 - SPIGOT (Synthetic Streamflow Generation Software Package),
 - LaTeX (A document preparation system)
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PUBLICATIONS

JOURNAL PUBLICATIONS

- Hilal, A., Vakitbilir, N. and **Akıntuğ, B.** Spatial and Temporal Analysis of Daily, Monthly and Seasonal Rainfall Characteristics across Northern Cyprus, *ASCE, Journal of Hydrologic Engineering*, 26(12), 2021.
- Samu, R. and **Akıntuğ, B.** Pre-disaster Planning and preparedness: Drought and Flood Forecasting and Analysis in Zimbabwe, *Water SA*, 46 (3), 448-457, 2020.
- Zaifoğlu, H., Yanmaz, A.M., and **Akıntuğ, B.** Developing Flood Mitigation Measures for the northern part of Nicosia, *Natural Hazards*, 98:535-557, 2019.
- Zaifoğlu, H., **Akıntuğ, B.** and Yanmaz, A.M., Regional Frequency Analysis of Precipitation Using Time Series Clustering Approaches, *ASCE, Journal of Hydrologic Engineering*, 23(6), 2018.
- Zaifoğlu, H. **Akıntuğ, B.** and Yanmaz, A.M., Quality Control, Homogeneity Analysis, and Trends of Extreme Precipitation Indices in Northern Cyprus, *ASCE, Journal of Hydrologic Engineering*, 22(12), 2017.
- Okoye, C.O., Solyali, O. and **Akıntuğ, B.**, Optimal Sizing of Storage Tanks in Domestic Rainwater Harvesting Systems: A linear programming approach. *Resources, Conservation and Recycling*, Volume 104, 131-140, 2015

- Şahin, E., **Akıntuğ B.** and M. Yanmaz, *Modeling of Morphou Flood and Remedial Measures*, Teknik Dergi (SCI-Expanded) Vol. 403, p. 6447-6462, 2013. (in Turkish, selected to be published in Digest 2013 in English).
- **Akıntuğ B.** and P. Rasmussen, A Markov-Switching Model for Annual Hydrologic Time Series, *Water Resources Research*, Vol. 41, No. 9, W09424, 2005.

CHAPTER IN THE BOOK

- Seyhun, R. and **Akıntuğ B.**, Trend Analysis of Rainfall in North Cyprus. *Causes, Impacts and Solutions to Global Warming*, Editor: I. Dincer, C. O. Colpan, and F. Kadioglu, DOI 10.1007/978-1-4614-7588-0_10, Springer, Science+Business Media New York, 2013.

CONFERENCE PROCEEDINGS

- Ruso, M., **Akıntuğ, B.**, and Kentel, E. *Optimum Tank Size for a Rainwater Harvesting System: Case Study for Northern Cyprus*, International Conference of Sustainable Built Environment, Helsinki, Finland, 22-24 May 2019. IOP Conference Series: Earth and Environmental Science, Vol 297, doi:10.1088/1755-1315/297/1/012026.
- Zaifoğlu, H., **Akıntuğ, B.**, Yanmaz, A.M., *Quality and Homogeneity Analysis of Precipitation Data in North Cyprus*, 13th International Congress on Advances in Civil Engineering, Çeşme, İzmir, Turkey, September 2018.
- Hamza, A., Zaheer, M., and **Akıntuğ, B.**, Assessment of Sustainable Sanitation Systems: Urban Slums, International Research Conference on Civil, Architectural and Environmental Engineering, Istanbul, Turkey, 17-18 May, 2017.
- Zaifoğlu, H. and **Akıntuğ B.** Remedial Measures for Flood Problems of Nicosia Industrial Area, North Cyprus. 12th International Congress on Advances in Civil Engineering, İstanbul, Turkey, 21-23 October 2016.
- Jahani, E., **Akıntuğ, B.** and Dickhaut, W. A Case Study of Rainfall Water Harvesting Effects on Runoff for Guzelyurt, Northern Cyprus. International Conference of Sustainable Built Environment, Hamburg, Germany, 7-11 March 2016.
- Çakal, S. and **Akıntuğ, B.**, *Palmer Drought Severity Index for North Cyprus*, Global Conference on Global Warming (GCGW - 2015), Athens, Greece, 24-27 May 2015.
- Qureshi, F. U. and **Akıntuğ, B.**, *Hydropower Potential in Pakistan*, 11th International Congress on Advances in Civil Engineering, Istanbul, Turkey, 21-25 October 2014.
- Okoye, C. O. and **Akıntuğ, B.**, *Feasibility of Rainwater Harvesting System for Sustainable Water Management in Eastern Mediterranean University*. 11th International Congress on Advances in Civil Engineering, Istanbul, Turkey, 21-25 October 2014.
- Özverel C., **Akıntuğ, B.** Güllü, G. *The Waste Composition of the Middle East Technical University – Northern Cyprus Campus*. Proceedings of 9th Annual International Symposium on Environment, Athens, Greece, 12-15 May 2014.

- Zuberi, M. J. S., M. A. A. Khan, and **B. Akıntuğ**. *Rainwater Harvesting Systems for Dormitories of METU – Northern Cyprus Campus*, 17th International Water Technologies Conference (IWTC17), Istanbul, Turkey, 5-7 November 2013.
 - **Akıntuğ, B.**, A. M. Yanmaz, Z. Akyurek, and S. Surer, *Analysis of 2010 Bostancı-Guzelyurt Flash Flood*, 10th International Congress on Advances in Civil Engineering, Ankara, Turkey, 17-19 October 2012.
 - Seyhun, R. and **B. Akıntuğ**, *Trend Analysis of Rainfall in North Cyprus*, Global Conference on Global Warming (GCGW - 2012), Istanbul, Turkey, 8-12 July 2012.
 - **Akıntuğ B.** and P. Rasmussen, *Incorporating Parameter and Data Uncertainty into the Analysis of Energy Drought*. Proceedings of EWRI-ASCE World Water and Environmental Resources Congress, Honolulu, Hawaii, USA, 12-16 May 2008.
 - **Akıntuğ B.** and O. Baykan, *Modeling Annual Hydrologic Time Series using Hidden Markov Model*, 5th National Hydrology Congress, Middle East Technical University, Ankara, Turkey, 5-7 September 2007 (in Turkish).
 - Baykan O. and **B. Akıntuğ**, *Dam Tourism*, Ege University, Çeşme National Tourism Symposium, Çeşme, Turkey, 21-23 November 2007 (in Turkish).
 - **Akıntuğ B.** and P. Rasmussen, *Simulation of Monthly Flows Using Markov-Switching Model*, American Geophysical Union (**AGU**) Meeting, The 2005 Joint Assembly, New Orleans, Louisiana, USA, 23-27 May 2005.
 - **Akıntuğ B.** and P. Rasmussen, *Drought Frequency Analysis of Manitoba Hydro*, 17th Canadian Hydro-technical Conference, Canadian Society for Civil Engineers (CSCE), Edmonton, Alberta, Canada, 17-19 August 2005.
 - Rasmussen P. and **B. Akıntuğ**, *Drought Frequency Analysis with a Hidden Markov Model*. Proceedings of EWRI-ASCE World Water and Environmental Resources Congress, Salt Lake City, Utah, USA, 2004.
 - Baykan O. and **B. Akıntuğ**, *Real Evapotranspiration, Equi-Drought, Equi-Drought Severity and Equi-Runoff Maps of North Cyprus*. The Development in Civil Engineering, The 4th Technical Congress, Eastern Mediterranean University, North Cyprus, 2000 (in Turkish).
 - **Akıntuğ B.** and A. Günyaktı, *Palmer Drought Severity Index (PDSI) Analysis of Turkish Republic of Northern Cyprus*. The 2nd National Hydrometeorology Symposium, The Union of the Chambers of Turkish Engineers and Architects, Ankara, Turkey, 1998 (in Turkish).
 - **Akıntuğ, B.** Günyaktı, A. and Baykan, N. O., *Drought Analysis of North Cyprus using Palmer Drought Severity Index (PDSI)*, The Development in Civil Engineering, 3rd Technical Congress, Middle East Technical University, Ankara, Turkey, 1997 (in Turkish).
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CONFERENCE PRESENTATIONS WITH ABSTRACT and POSTERS

- Koyuncu, B. and **Akıntuğ, B.**, *Trend Analysis of Evaporation in Northern Cyprus*, EGU General Assembly 2019 Vienna, Austria. Geophysical Research Abstracts, Vol. 21, EGU2019-12973, 7-12 April 2019. (poster)
 - Zaifoğlu, H., **Akıntuğ, B.**, Yanmaz, A.M., Trend analysis of extreme precipitation indices for Northern Cyprus, Proc. of the 5th IAHR Europe Congress, Trento, Italy, 12-14 June 2018. (poster)
 - Zaifoğlu, H., **Akıntuğ, B.**, Yanmaz, A.M., Assessment of Bostancı flood by integrated 1D/2D modelling, Proc. of the 5th IAHR Europe Congress, Trento, Italy, 12-14 June 2018. (presentation)
 - Demir, C., Fanta, D., **Akıntuğ, B.** and Ünlü, K. Conceptual and numerical modeling of Güzelyurt akifer, Turkish Republic of Northern Cyprus (TRNC), International Symposium on GIS Applications in Geography and Geosciences, Çanakkale, Turkey, 18-21 October 2017. (presentation)
 - **Akıntuğ, B.** and Rasmussen, P, Simulation of Monthly Flows Using a Markov Switching Model, AGU Meeting, New Orleans, USA, 23-27 May 2005. (poster)
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TECHNICAL REPORTS

- **Akıntuğ, B.**, *Static Analysis of Selected Sewer Pipes in the City of Famagusta Sewage Network*, Technical Report, prepared for Emek – WTE Consortium, Nicosia, North Cyprus, 2013.
 - **Akıntuğ, B.**, ., A. M. Yanmaz, Z. Akyurek, and S. Surer, *Analysis of 2010 Bostancı-Güzelyurt Flood and Remedial Measures*, Technical Report, Middle East Technical University Northern Cyprus Campus, Civil Engineering Program, North Cyprus, 2013.
 - **Akıntuğ B.**, *Frequency Analysis of Energy Drought*. Technical Report, Resource Planning and Market Analysis Department, Manitoba Hydro, Manitoba, Canada, 2002.
-

OTHER ACTIVITIES WITHIN ENGINEERING AND ACADEMIC PROFESSIONS

- **Invited Speaker.** *Characteristics of Rainfall, Droughts, and Rainwater Harvesting*. 1st National Civil Engineering Symposium by Cyprus Turkish Chamber of Civil Engineers, **25-26 June 2021**.
- **Invited Speaker.** *Flood Management*. A seminar given to the President of Northern Cyprus Mr Mustafa Akıncı, **12 June 2019**.
- **Invited Speaker.** *Analysis of Floods and Droughts in North Cyprus*. 5th International Conference on New Advances in Civil Engineering, **8-10 November 2019**.
- **Member**, Scientific Committee member Sustainable Build Environment (SBE2016) Hamburg, Germany.

- **Moderator.** 2016 International Day for Disaster Risk Reduction Workshop, Famagusta, North Cyprus, **13 October 2016.**
 - **Invited Speaker.** *Water Resources Engineering Studies in Northern Cyprus.* 2016 World Environment Day. Climate Change in Cyprus: How can we work together to fight desertification? Home for Cooperation, Nicosia, Cyprus. **13 June 2016.**
 - **Invited Speaker** in International Day for Disaster Risk Reduction Meeting, Near East University, Nicosia, North Cyprus, **15 October 2015.**
 - **Invited Speaker** in International Day for Disaster Risk Reduction Meeting, Girne American University, Sato Lambousa, Girne, North Cyprus, **16 October 2014.**
 - **Invited Speaker** in 2nd European Council of Civil Engineers Conference, Water Management in Europe, Hilton Hotel Nicosia, Cyprus, **25 October 2013.**
 - **Invited Speaker** in International Day for Disaster Risk Reduction Meeting, Near East University, Nicosia, North Cyprus, **25 October 2013.**
 - **Workshop Organizer** (with Prof. Dr. Kahraman Unlu), Solid Water Management in North Cyprus: Current Status and Future Prospective, Middle East Technical University-Northern Cyprus Campus, **14 March 2013.**
 - **Speaker** in 1st Resource Efficiency in Architecture and Planning (REAP) Conference, Interdisciplinary Work in Teaching and Research, HafenCity University, Hamburg, Germany, **7-8 February 2013.**
 - **Member**, the Board of Sustainable Environment and Energy Systems Graduate Program, Middle East Technical University-Northern Cyprus Campus, **Sept. 2013-2016.**
 - **Member**, Green Campus Initiative Board, Middle East Technical University-Northern Cyprus Campus, **2012-2018.**
 - **Member**, Water Management Committee, Cyprus Turkish Chamber of Civil Engineers, **2011-Present.**
 - **Member**, Organizing Board, Science and Technology Association, **2011-2015.**
 - **Invited Speaker** in the workshop on Water Management in North Cyprus: Problems and Resolution Advisories, Near East University, Nicosia, North Cyprus, **22 March 2011.**
 - **Academic Advisor**, Civil and Construction Society, Middle East Technical University-Northern Cyprus Campus **2010-2019.**
 - **Member, Scientific Committee**, 8th International Congress on Advances in Civil Engineering, Famagusta, N. Cyprus, **2008.**
 - **Member, Engineering Academic Board**, Middle East Technical University-Northern Cyprus Campus, **Oct. 2006- Sep. 2009.**
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SCHOLARSHIPS, GRANTS, BURSARIES, AND AWARDS,

- European Union, Scholarship for Research **Jul. – Aug. 2014**
- Collaborative Research and Development (CRD) Grant,
Natural Sciences and Engineering Research Council (NSERC), Canada. **2002 - 2005**
- Research Grant, Manitoba Hydro, Canada. **2000 - 2002**
- Graduate Students Association / University of Manitoba Students Union
Graduate Bursary, University of Manitoba, Canada. **2004 - 2004**
- TD Bank Financial Group Bursary, Canada. **2004 - 2004**
- Katherine Bender Bursary, University of Manitoba, Canada. **2004 - 2004**
- Robert Charles Armatage Bursary, University of Manitoba, Canada. **2002 - 2002**
- Manitoba Bursary, Government of Manitoba, Canada. **2001 - 2004**
- Outstanding Student Award, Turkish Education Foundation, Turkey. **1987 – 1991**