Fahri Baran KÖROĞLU
Graduate Research Assistant
PhD Student
Sanliurfa, Turkey
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RESEARCH INTERESTS	Reinforced Concrete Structures, Earthquake Engineering, Reliability of Structures, Artificial Neural Networks

EDUCATION	*Doctor of Philosophy*	2025-present
	Middle East Technical University, Ankara/Turkey	
	Deparment of Civil Engineering Department	
	Division: Structural Engineering	
	CumGPA: 4.00/4.00	
	Master of Science	2020-2023
	İzmir Institute of Technology, İzmir/Turkey	
	Deparment of Civil Engineering	
	Division: Structural Engineering	
	CumGPA: 4.00/4.00	
	Rank: Highest CumGPA in the institution	
	Dissertation Topic: *Application of Artificial Neural Networks to Structural Reliability Problems*	
	Bachelor of Science	2016-2020
	İzmir Institute of Technology, İzmir/Turkey	
	Deparment of Civil Engineering	
	Division: Structural Engineering	
	CumGPA: 2.94/4.00	
	Rank: 3rd Highest CumGPA of the department for the class of 2020	
	Graduation Project Topic: *Analysis and Design of 5-storey Reinforced Concrete Structure under Earthquake Demand*	

COMPUTER SKILLS	*Programming Languages:* C Programming Language, MATLAB, Python *Softwares:* CSi SAP2000, CSi ETABS, OpenSees, AutoCAD, wxMaxima, ideCAD, PTC Mathcad, XTRACT *Office Programs:* MS Word, MS Excel, MS PowerPoint, LaTeX, Inkscape

LANGUAGES	Turkish, English

EXPERIENCE

Graduate Research Assistant   28.01.2022-present
Harran University, Civil Engineering Department, Şanlıurfa/Turkey

- Assisted courses: Fundamentals of Reinforced Concrete Structures, Reinforced Concrete Structure Design, Construction Materials Laboratory, Fundamentals of Steel Structures, Professional English and Technical Reporting

Graduate Teaching Assistant   14.08.2023-31.12.2023
University of Nebraska-Lincoln, Durham School of Architectural Engineering and Construction, Nebraska/USA

- Assisted courses: Architectural Engineering Team Design, Structural Mechanics

Intern   15.08.2019-07.09.2019
Kınacı Engineering and Architectural Consultancy, Ankara/Turkey
- Office Internship

Intern   13.08.2018-17.09.2018
Özge Construction, Kahramanmaraş/Turkey
- Field Internship

THESIS

[1] Köroğlu F.B. (2023) Application of Artificial Neural Networks to Structural Reliability Problems. MSc. Thesis. İzmir Institute of Technology. İzmir, Türkiye. (Supervisors: Prof. Dr. Engin AKTAŞ and Assoc. Dr. Marc MAGUIRE)

JOURNAL PAPERS

[1] Pujol S., Bedirhanoglu I., Donmez C., Dowgala J.D., Eryilmaz-Yildirim M., Klaboe K., **Koroglu F.B.**, Lequesne R.D., Ozturk B., Pledger L., and Sonmez E.,Quantitative evaluation of the damage to RC buildings caused by the 2023 southeast Turkey earthquake sequence. Earthquake Spectra. 2024;40(1):505-530. doi:10.1177/87552930231211208

[2] Sönmez E., Eryılmaz Yıldırım M., Aydın M.F., **Köroğlu F.B.** (2025) Seismic Performance Assessment of Structural Systems in the Aftermath of the 2023 Kahramanmaraş Earthquakes: Observations and Fragility Analysis. Earthquake Spectra. https://doi.org/10.1177/87552930241287541

[3] Avgın S, **Köroğlu F.B.**, Güllü M.F., Köse M.M. (202x) A Refined Experimental Dataset for Reinforced Concrete (RC) Columns. (Submitted to ASCE Journal of Structural Engineering. Accepted and waiting for publication.)

[4] **Köroğlu F.B.**, Güllü M.F., Çiftçi S., Pledger L., Schill C., Pujol S. (202x) A Fast Seismic Assessment Technique for Reinforced Concrete Buildings: DNN-based Hassan Index (Submitted to Structures. Accepted and waiting for publication.)

[5] **Köroğlu F.B.**, Avgın S., Güllü M.F., Köse M.M. (202x) A Python Software for Generating Backbone Curve from Force-Displacement Data: Backbone4Hysteresis (Software development completed. Manuscript writing phase.)

[6] **Köroğlu F.B.**, Cashell K., Erberik M.A., Güllü M.F., (202x) DNN-based Energy Absorption Capacity of Reinforced Concrete Columns (Underpreparation)

CONFERENCE PAPERS

[1] Aydın, M.F., Yıldırım, M.E., **Köroğlu, F.B.**, Sönmez, E. (2024). Analyzing Structural Performance of Buildings in the Kahramanmaraş Earthquakes: The Role of Structural Systems. In: Uckan, E., Akgun, H., Gok, E., Yenidogan, C. (eds) Proceedings of the 7th International Conference on Earthquake Engineering and Seismology. ICEES 2023. Lecture Notes in Civil Engineering, vol 488. Springer, Cham. https://doi.org/10.1007/978-3-031-57659-1_9

[2] **Köroğlu, F.B.**, Sönmez, E., Yıldırım, M.E. (2024). Evaluation of the Structural Damage Caused by the 2023 Türkiye Earthquakes in Light of the Design-Basis and Measured Ground Motion Intensities. In: Uckan, E., Akgun, H., Gok, E., Yenidogan, C. (eds) Proceedings of the 7th International Conference on Earthquake Engineering and Seismology. ICEES 2023. Lecture Notes in Civil Engineering, vol 488. Springer, Cham. https://doi.org/10.1007/978-3-031-57659-1_8

[3] **Köroğlu, F.B.**, Maguire, M., Aktaş, E. (2024). Investigation of the Effect of Artificial Neural Network Performance Parameters and Training Dataset on the Probability Estimate Capacity in Structural Reliability Problems. In: Matos, J.C., et al. 20th International Probabilistic Workshop. IPW 2024. Lecture Notes in Civil Engineering, vol 494. Springer, Cham. doi.org/10.1007/978-3-031-60271-9_37

[4] B. Abdo, M. Eryilmaz Yildirim, **F.B. Koroglu**, B. Ozturk, E. Sönmez, M. S. Speicher, S. Pujol (2024) Correlation Between Intensity Measures and Damage Caused by The 2023 Turkey Earthquakes. In proceedings of 18th World Conference on Earthquake Engineering. Milan, Italy.

[5] C. Donmez, J. Dowgala, M. E. Yildirim, M. F. Gullu, L. Iturburu, **F.B.Koroglu**, R. Lequesne, B. Ozturk, S. Pujol, J. D. Rincon, C. Sim M.S. Speicher (2024) Lessons From the 2023 South-East Türkiye Earthquakes: A Study On Damaged RC Buildings Considering the Hassan Index. In proceedings of 18th World Conference on Earthquake Engineering. Milan, Italy.

[6] **Köroğlu F.B.**, Cashell K., Aktas E., (2025) Unveiling the Implicitness: Kolmogorov-Arnold Networks for Structural Reliability Problems. 21st International Probabilistic Workshop. IPW 2025. Rostock, Germany. ce/papers, 8: 339-344. https://doi.org/10.1002/cepa.3308

[7] Kozak N., Zolotov V., Rudakov I., **Koroglu F.B.**, Matos J.C., (2025) Methodological Framework for Assessing the Reliability Indices of Composite Bridge Superstructures Considering the Degradation of Shear Connectors: Aspects of Technical Implementation. IABSE Congress Ghent 2025. Ghent, Belgium (Full paper is accepted. Waiting for publication.)

COMPETITIONS, RECONNAISSANCE VISITS, CONFERENCES AND WORKSHOPS	*Artificial Intelligence in Structural Engineering Summer School* Politecnico di Torino • Attended as attendee	18.09.2025-20.09.2025
	21st International Probablistic Workshop University of Rostock • Attended as presenter • Achieved the Young Presenter Award	10.09.2025-12.09.2025
	18th World Conference on Earthquake Engineering Milano / Italy • Attended as attendee	30.06.2024-05.07.2024
	20th International Probablistic Workshop University of Minho • Attended as presenter	08.05.2024-10.05.2024
	Reconnaissance Visit after 2023 Türkiye Earthquakes ACI133-Disaster Reconnaissance Commitee • Attended as Researcher	24.03.2023-07.04.2023
	Structural Dynamics Online Workshop İzmir Institute of Technology • Attended as Teaching Assistant	08.02.2020-13.02.2021
	OpenSees Online Workshop Earthquake Engineering Association of Turkey • Attended as attendee	18.12.2020-20.12.2020
	DASK Earthquake Resistant Building Design Competition Turkish Natural Catastrophe Insurance Pool • Finalist and 4th place on presentation branch	March 2019
AWARDS	Young Presenter Award • from IPW2025 Scientific Committee	Fall, 2025
	Certificate of 3rd in the Class • from Izmir Institute of Technology	Graduation, 2020
	Certificate of High Honor • from Izmir Institute of Technology	Spring Semester, 2019-2020
	Certificate of Honor • from Izmir Institute of Technology	Fall Semester, 2019-2020
	Certificate of Honor • from Izmir Institute of Technology	Fall Semester, 2016-2017

EXTRA-CURRICULAR ACTIVITIES	*President* • İYAP	May 2019-July 2020
	Vice President • İYAP	May 2018-May 2019
	Member of Board • İYAP	May 2018-July 2020
TEST SCORES	*TOEFL iBT* • Reading: 29/30 • Listening: 29/30 • Speaking: 23/30 • Writing: 26/30	28 August 2024
	GRE • Verbal Reasoning: 149/170 • Quantitative Reasoning: 164/170 • Analytical Writing: 3/6	18 August 2022