

RESUME

Aliakbar Golshani

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Languages: English, Japanese and Persian

Current Position

Lecturer in Geotechnical Engineering

Faculty of Civil and Environmental Engineering, Trabiati Modares University,
Tehran, Iran

March 2009 – to present

Qualifications

Ph.D. in Geotechnical Engineering

- Thesis title: “A micromechanical model for brittle failure of rock under compression”

October 2000 – September 2003, Saitama University, Japan

M.Sc. in Geotechnical Engineering

- Thesis title: “Interaction between saturated soil and symmetrical structures due to water wave loading by porous media theory”

October 1996 – September 1998, University of Tehran, Tehran, Iran

B.Sc. in Civil Engineering

April 1992 – September 1996 Iran University of Science and Technology,
Tehran, Iran

Distinction and Awards

- Ranked 138th among more than 300,000 participants in the Nation-wide University Entrance Exam for B.Sc degree, 1992
- Honor degree in B.Sc. (1992-1996)
- Honor degree in M.Sc. (1996-1998)
- MONBUSHO scholarship of Japanese government (2000-2003)
- Best Paper Award of 5th International Summer symposium of Japan Society of Civil Engineers; JSCE, Japan, July 2003.

- Japanese Society for the Promotion of Science (JSPS) Post-doctoral Fellowship (2004 – 2006)
- ScienceDirect Top25 Hottest Articles (2007), “Numerical simulation of excavation damage zone around a tunnel in brittle rock”, International Journal of rock Mechanics and Mining Sciences, 44(6), 2007, pp. 835-845.

Work Experience

Lecturer

Faculty of Engineering and Surveying, University of Southern Queensland (USQ), Toowoomba, QLD 4350

June 2006 – February 2009

Post-doctoral Researcher

Saitama University, Saitama, Japan

April 2004 – March 2006

Responsibilities:

- Model damage growth and permeability changes during creep around tunnels numerically and experimentally.
- Provide regular and complete progress reports and publish the outcome of the research in journals and present in conferences.
- Guide master and undergraduate students in their research.

Bridge Engineer and Geotechnical Engineer

Rahavar Consulting Engineers Company, Tehran, Iran

April 1996 – September 2000 and April 2006 – December 2006

Responsibilities:

- To prepare/check feasibility studies, technical reports and other documents
- To plan geotechnical field and laboratory investigation programs
- To revise/check laboratory and field tests results
- To perform/check structural analysis
- To check CAD drawings and documents, the direction and supervise CAD technicians
- To carry out site visits, surveys, and inspection of bridges and structures

Teaching Experience

- Advanced Engineering Mathematics, Finite Element Method, Advanced Soil Mechanics, Advanced Foundation Engineering, Rock Mechanics, Fracture Mechanics, Marine Geotechnics (Tarbiat Modares University, Iran)
- Geotechnical Engineering, Geomechanics and Soil Mechanics Laboratory (University of Southern Queensland, Australia)
- Soil Mechanics, Rock Mechanics (Saitama University, Japan)

Professional Memberships

- Iranian Society of Civil Engineers
- Engineers of Australia
- Japanese Society of Civil Engineers
- Iranian Society of Rock Mechanics (IRSRM)

Software Competencies

- DIANA, ABAQUS, PLAXIS, FLAC
- SAP2000, ETABS, MATS
- Geo-studio software
- Roclab
- Microsoft Office software (Word, Excel, Power Point)
- Fortran, Mathematica, Matlab
- AutoCAD, Adobe Photoshop

Research Interests

- Numerical Modeling in Geotechnical Engineering
- Experimental Approaches in Geotechnical Engineering
- Soil (Rock) Mechanics
- Soil -Structure Interaction
- Fracture Mechanics
- Crack Growth Mechanism in Brittle Materials
- Tunnel Engineering

Publications

- Gharizade Varnusfaderani M., Golshani A. and Maidian S., "Analysis of Cylindrical Tunnels under Combined Primary Near-fault Seismic Excitations and Subsequent Revers Fault Rupture", Acta Geodynamica et Geomaterialia, 14, 1(185), 2017, pp. 5-26 (accepted).
- Pirjalil, A., Golshani, A. and Mirzaii, A., "Experimental Study on the Coefficient of Lateral earth Pressure in Unsaturated Soils",

3rd European Conference on Unsaturated Soils, 12-14 September 2016, Paris, France.

- Gharizade Varnusfaderani, M., Golshani A. and Nematı R., "Behavior of Circular Tunnels Crossing Active Faults", *Acta Geodynamica et Geomaterialia*, 12, 4(180), 2015, pp. 363-376.
- Panaghi, K., Golshani, A. and Takemura, T., "Rock Failure Assessment based on Crack Density and Anisotropy Index Variations during triaxial Loading Tests", *Geomechanics and Engineering*, 9(6), 2015, pp. 793-813.
- Eslami B. and Golshani A., "Application of the Hardening Soil Model during Underground Excavation Analysis – Case Study Line 2 Metro of Mashhad", *ITA WTC 2015 Congress and 41st General Assembly*, May 22-28, 2015, Dobrovnik, Croatia.
- Eslami B. and Golshani A., "Grouting Pressure Effect on Ground Settlement in Excavation by using TBM in Urban Area – Case Study Line 2 Metro of Mashhad", *2nd International Congress in Civil Engineering*, 4-7 May, 2015, Tabriz, Iran.
- Golshani A. and Panaghi K., "Theoretical Studies on Explosive Excavation in Rocks", *2nd International Congress on Structure, Architecture and Urban Development*, 16-18 December, 2014, Tabriz, Iran.
- Golshani A., Buyuk Aghazadeh R. and Asgari A., "Numerical Modeling of Seismic Behaviour of piles in Liquefiable Soils", *2nd National Conference of Geotechnical Engineering*, 1-2 October, 2014, Kermanshah, Iran.
- Golshani A., Hoseini M. and Majidian S., "Construction of Underpassing a Crowded Junction (case study, Tehran)", *Geotechnical Aspects of Underground Construction in Soft Ground 2014*, 25-27 August, 2014, Seoul, Korea.
- Zolghadr E., Pasdarpour M. and Golshani A., "Temporary Support of Excavation Walls - Case Study", *Geotechnical Aspects of Underground Construction in Soft Ground 2014*, 25-27 August, 2014, Seoul, Korea.
- Behnia M., Goshtasbi K., Fatehi Marji M. and Golshani A., "Numerical Simulation of Interaction between Hydraulic and Natural Fractures in Discontinuous Media", *Acta Geotechnica*, Germany, Jun 2014, Pages 1-14.
- Behnia M., Goshtasbi K., Fatehi Marji M. and Golshani A.,

"Numerical simulation of crack propagation in layered formations", *Arabian Journal of Geoscience*, Saudi Arabia, 2014, No. 7, Pages 2729-2737.

- Asgari A., Golshani A. and Bagheri M., "Numerical Evaluation of Seismic Response of Shallow Foundation on Loose Silt and Silty Sand", *Journal of Earth System Science*, India, March 2014, No. 2, Pages 365-379.
- Berneti M., Golshani A. and Yasrobi S., "Determination of Bearing Capacity for Driven Piles in Sandy Soils by Using Artificial Neural Network Method", Summer 2014, *Modares Journal of Science and Technology*, Tarbiat Modares University, Iran, pp. 27-36.
- Behnia M., Goshtasbi K., Fatehi Marji M. and Golshani A., "The Effect of Layers Elastic Parameters on Hydraulic Fracturing Propagation Utilizing Displacement Discontinuity Method", *Journal of Analytical & Numerical Methods in Mining Engineering*, Spring – Summer 2014, Yazd Univeristy, pp. 1-13.
- Golshani, A. and Nemat, R., "Numerical Modeling of Soil Penetration Test in Cohesive Soils", *Modares Journal of Science and Technology*, Tarbiat Modares University, Iran, 14(1), 2014, pp. 85-98.
- Hosseini M., Golshani A. and Majidian S., "Numerical Modeling for Construction of Large Span Bifurcations of Niayesh Tunnel", *Electronic Journal of Geotechnical Engineering*, USA, 2014, No. 19, Pages 1457-1470.
- Behnia, M., Goshtasbi, K., Golshani, A. and Fatehi, M., "Experimental Investigation of Hydraulic Fracturing Propagation in Multi-layer Formations", Summer 2013, *Modares Journal of Science and Technology*, Tarbiat Modares University, Iran, pp. 13-25.
- Takemura, T., Oda, M., Kirai, H. and Golshani, A., "Microstructural based Time-dependent Failure Mechanism and its Relation to Geological Background", *International Journal of rock Mechanics and Mining Sciences*, 53, 2012, pp. 76-85.
- Mir Mohammadrezaei, S. and Golshani, A., "The Effect of Soil Mechanical Properties on Response of Soil-Pile System under Earthquake Loading", *Sharif Journal of Science and*

Technology, Sharif University, Iran, 28-2(1), 2012, pp. 57-49

- Golshani, A. and Rajabi, H., "Numerical modeling of confinement effects on failure pattern of brittle rocks in triaxial tests", *Modares Journal of Science and Technology*, Tarbiat Modares University, Iran, 11(2), 2011, pp. 79-89.
- Firoozabadi, H., Yazdani, M. and Golshani, A., "Examining design criteria to prevent hydraulic jacking phenomenon in pressure tunnels", *First Asian and 9th Iranian Tunneling Symposium*, 31 October – 3 November 2011, Tehran, Iran.
- Javadi, H., Javadi, M., Golshani, A. and Shirzad, H., " Investigation of Ground Settlement due to Excavation Stages for Binocular Urban Tunnels Numerically – Case Study of Amirkabir Tunnel", *First Asian and 9th Iranian Tunneling Symposium*, 31 October – 3 November 2011, Tehran, Iran.
- Javadi, M., Golshani, A., Moghadaspoor, M., Reiser, B. and Shirzad, H., "Numerical Modeling, Monitoring, and Field Observations for Comparative Evaluation of Subsidence-Induced", *First Asian and 9th Iranian Tunneling Symposium*, 31 October – 3 November 2011, Tehran, Iran.
- Javadi, H., Golshani, A., Javadi, M. and Shirzad, H., " Binocular Tunnel Induced Subsidence of Sequential Excavation in Urban Area- Case Study of Amirkabir Tunnel", *First Asian and 9th Iranian Tunneling Symposium*, 31 October – 3 November 2011, Tehran, Iran.
- Behnia, M., Goshtasbi, K., Golshani, A. and Fatehi, M., "Numerical Modeling of Artificial Hydro-Fractures in Hot Dry Rock Reservoirs by Using Displacement", *Thirty Sixth Workshop on Geothermal Reservoir Engineering*, January 31 – February 2, 2011, Stanford, USA.
- Golshani, A. and Rajabi, H., "Numerical Modeling of Confinement Effects on Mechanical Properties and Failure Pattern of Brittle Rocks in Triaxial Tests With PFC3D", *Second Australian Ground Control in Mining Conference 2010*, 22-24 November, 2010, Sydney, Australia.
- Komak Panah, H., Yasrebi, S. and Golshani, A., "Prediction of Expansive Soils Behavior by using Artificial Neural Network", *4th International Conference of Geotechnical Engineering and Soil Mechanics (ICGESM)*, Tehran, 2-3 November, 2010, Iran.

- Morad Abadi, E. and Golshani, A., "Effect of Soil Particle Size Distribution and Water Content on the Solute Transport in Unsaturated Porous Media", SWCS Annual Conference Dearborn Michigan 11-15 July, 2009, MI, USA.
- Golshani A. and Tran-Cong, T., "Energy Analysis of Hydraulic Fracturing", Korean Journal of Civil Engineering,13(4), 2009, pp. 219-224.
- Golshani, A. and Tran-Cong, T., "Simulation of hydraulic fracturing in brittle rocks", ISRM International Symposium 2008 and 5th Asian Rock Mechanics Symposium (ARMS5), 24-26 November, 2008, Tehran, Iran, pp. 1047-1054.
- Golshani, A., Tran-Cong, T. and Buttsworth, D., "Impact on a water filled cylinder", Asian conference on mechanics of functional materials and structures (ACMFMS), 31 October - 3 November, 2008, Matsue, Shimane, Japan, pp. 53-56.
- Golshani, A. and Tran-Cong, T., "Energy Analysis of Hydraulic Fracturing", The 12th International Conference of IACMAG, 1-6 October, 2008, Goa, India, pp. 251-259.
- Golshani, A., Oda, M., Takemura, T. and Okui, Y., "Numerical simulation of excavation damage zone around a tunnel in brittle rock", International Journal of rock Mechanics and Mining Sciences, 44(6), 2007, pp. 835-845.
- Golshani., A., Okui, Y., Oda, M. and Takemura, T., "A micromechanical model for brittle failure of rock and its relation to crack growth observed in triaxial compression tests of granite", Mechanics of Materials, 38 (4), 2006, pp.287-303.
- Golshani, A., Tran-Cong, T., "Modeling a borehole subjected to fluid pressure", International Conference on Nonlinear Analysis& Engineering Mechanics Today 2006, 11-14 December 2006, Ho Chi Minh City, Vietnam.
- Takemura, T., Golshani, A., Oda, M., Suzuki, K. and Nakama, S., "Experimental study on damage growth and failure of granitic rocks during creep under deep geological environments", Journal of the Japan Society of Engineering Geology, 2005, 46(5), p.p.280-286.
- Kirai, H., Oda, M., Takemura, T., Golshani, A., Suzuki, K. and Takahashi, M., "Failure mechanism of Oshima granite during creep", The annual meeting of Japan Society of Engineering

Geology, JSEG, 27-28 October 2005, Nagoya, Japan, pp. 91-92 (in Japanese).

- Golshani, A., Okui, Y., Oda, M, and Takemura, T., “Hydraulic behaviour of Inada granite in the excavation disturbed zone around underground openings“, The Seventh International Summer Symposium, JSCE, 30 July 2005 Tokyo, Japan, pp. 153-156.
- Golshani, A., Okui, Y., Oda, M., “Simulation of damage around a circular opening in rock”. The 11th International Conference of IACMAG, 19-24 June, 2005, Turin, Italy, pp. 33-40.
- Golshani, A., Okui, Y., Oda, M. and Takemura, T., “Time-dependent continuous damage model for brittle failure of rocks”, 53rd Geomechanics Colloquy and EUROCK 2004, 7-9 October, 2004, Salzburg, Austria, pp.701-706.
- Nguen, B.M., Golshani, A., Munkhtogoo, E., Takemura, T. and Oda, M., “Experimental study on creep behavior of Inada granite”. The Sixth International Summer Symposium, JSCE, 31 July 2004 Saitama, Japan, p.p.253-256.
- Takemura, T., Golshani, A., Oda, M. and Suzuki, K., “Preferred orientations of open microcracks in granite and their relation with anisotropic elasticity”, International Journal of rock Mechanics and Mining Sciences, 40(2003), pp. 443-454.
- Golshani, A., Takemura, T., Okui, Y., Oda, M. and Suzuki, K., “ A microcrack-based constitutive model for brittle geomaterials”, The 3rd International Symposium on Rock Stress – RS Kumamoto '03 – 4-6 November, 2003, Kumamoto, Japan, pp. 219-224.
- Golshani, A., Takemura, T., Oda, M. and Suzuki, K., “Elasticity Anisotropy in Oshima Granite”, 10th Congress of the Int. Society for Rock Mechanics, 8-12 Sept., 2003, Sandton Convention Centre, Gauteng, South Africa, pp. 377-388.
- Golshani, A., Okui, Y., Takemura, T. and Oda, M., “A microcrack growth and interaction effect mechanisms in rock failure under compressive stress”. The Fifth International Summer Symposium, JSCE, 26 July 2003 Tokyo, Japan, pp.225-228.
- Golshani, A., Takemura, T., Takizawa, A., Kaya, K., Oda, M. and Suzuki, K., “Determination of Oshima Granite elastic constants using uniaxial test and crack tensor theory.”, 11th

Japan Symposium on Rock Mechanics, 24-25 January, 2002, Chiba, Japan, E14.

- Golshani, A. and Golshani, A.S., "The effects of the axial deformation on the analysis of indeterminate structures", The Third Civil Engineering Students Conference, 1995, Khajeh Nasireddin Toosi University of Technology, Tehran, Iran.
- Tavassoli, M. and Golshani, A., "The special foundations", The Third Civil Engineering Students Conference, 1995, Khajeh Nasireddin Toosi University of Technology, Tehran, Iran.
- Golshani, A. and Golshani, A.S., "The sensitivity of the performance of an earth pressure cell to the variations of the soil characteristics", The Second Civil Engineering Students Conference, 1994, University of Tehran, Faculty of Eng., Tehran, Iran.