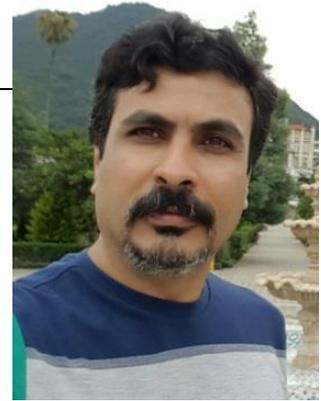


# Ali Rafiee



## Personal Information

- Date of Birth: 30 May 1977
- Marital status: Married
- Nationality: Iranian
- Place of Birth: Karaj, Iran
- Languages: Turkish, Persian, French, English

## Education

- 2004-2008, **PhD, Rock Mechanics**

“Contribution to the study of fractured rock masses: characterization of the in situ fracture network, geostatistics and discrete element modeling”  
University of Montpellier II, France

- 2000-2002, **M.Sc. Mining Engineering (Exploration)**  
Amir Kabir University of Technology (Tehran Polytechnic), Iran

Accepted in the PhD entrance national examination (2003) and awarded a PhD scholarship by the ministry of science, research and technology of Iran

Graduate of the first rank in M.Sc. (2003)

- 1995-2000, **B.Sc. Mining Engineering (Exploration)**  
Amir Kabir University of Technology (Tehran Polytechnic), Iran

First rank in the M.Sc. entrance national examination (2000)

Graduate of the first rank in B.Sc. (2000)

- 1992-1995, **Diploma of Mathematics & Physics**  
High school. Hashtgerd , Iran

## Course & Training

- Geomechanical Analysis for Wellbore Stability Studies  
Tehran Energy Consultants (TEC), Tehran, Iran
- Multivariate Geostatistics and Simulation  
Geostatistics Centre of Fontainebleau, ENSM Paris, France
- Geographical Information system  
National institution of higher learning in agronomics, Montpellier, France
- Cement factory of Abyek, Iran  
(Research and Development Division)
- Chromite mine of Fariyab, South of Iran

## **Professional experience**

- 2008-Present, University of Zanjan, Mining engineering group

Assistant professor, Zanjan, Iran

- 2002-2004, Geological Survey of Iran, Tehran

Engineer of exploration, Gold Exploration Group, Geochemical Survey of Iran, semi detailed survey in north of Iran (two national reports in 1:20000 scale and two others in 1:100000 scale), field measurement and report experience

- 2000-2002, Geological Survey of Iran, Tehran

Engineer of Exploration ,Geochemical Survey in North of Iran (Ten national reports in 1:100000 scale) field measurement and report experience

- 1999-2000. Geological Survey of Iran, Tehran

Engineer of Exploration, Geochemical Survey in Kerman-southeast of Iran (Jebal\_e\_Barez), field measurement and report experience

## **Computer experience**

- Windows and Linux
- Discrete element software (LMGC90, YADE, UDEC, 3DEC, Itasca software packages )
- CAD soft wares, such as AutoCAD, AutoCAD map, Salome
- CAD environment programming by VBA and Lisp language
- Familiar with Geomechanics and Wellbore Stability Software (GMI packages and STABview)
- Programming in VBA, Lisp, Fortran, Python
- Excel & VB programming in Excel
- R language, used in R platform
- Remote sensing package (ENVI)
- Statistical packages such as R, SPSS, GEOEASE, STAT VIEW
- Familiar with Surfer, Arcview
- Ansys, Finite element software

**Scientific  
experience**

- Jointed rock mass stability analysis
- Masonry structure modeling
- Modeling Seismic excitation in masonry and rock mass structures
- Granular media modeling (silo, soil mechanics...)
- Dynamic analysis in granular materials
- Geomechanics and Wellbore Stability
- Stochastically jointed rock mass model generation
- Statistical and geostatistical analysis
- Processing geochemical data
- Fractal geometry application in geochemical data analysis
- Multivariate statistics
- Analysis of satellite data (for determine alteration zones)
- GIS (familiar with Arcview software)

**Scientific interest  
field**

- Geomechanics and wellbore stability
- Rock mechanics
- Granular material modeling
- Discrete and finite element method
- Modeling of historical monuments
- Mine exploration data analysis
- Geochemical prospecting (field operation)
- Geosciences data analysis and Geostatistical analysis
- Remote sensing data analysis
- Computer Programming

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Webpage:  
<http://rafiee77.googlepages.com/>

## Publications

- Nazari Ostad, M., Asghari, O., Rafiee, A., Azizzadeh, M., & Khosbakhht, F. (2017). Categorical fracture orientation modeling: applied to an Iranian oil field. *Int. Journal of Mining & Geo-Engineering*, 51(2), 139-146.
- Kalhori, M., Rafiee, A., & Eshraghi, H. (2017). Numerical Simulation of Hydraulic Fracturing Process for an Iranian Gas Field in the Persian Gulf. *Journal of Chemical and Petroleum Engineering*, 51(1), 55-67.
- Rafiee, A. & Vinches, M. Implicit Discrete Element Analysis of a Masonry Cupola Under Seismic Loads, *Int J Civ Eng* (2016) Volume 14, Issue 6, pp 357–367.
- Kalhori M., Rafiee A., Eshraghi H. & Pourdehghan Y. Numerical analysis of hydraulic fracturing process for a gas field in southern Iran, Persian paper accepted in The First International Conference on Mining, Mineral Processing, Metallurgical and Environmental Engineering (ICME2013).
- Pourdehghan Y., Rafiee A., Eshraghi H., Naderi M. & Kalhori M. Magnitude and direction investigation of the stress field along a vertical well for determining optimal mud weight, case study: a gas field in southern Iran, Persian paper accepted in The First International Conference on Mining, Mineral Processing, Metallurgical and Environmental Engineering (ICME2013).
- Rafiee A. and Vinches M., Mechanical behaviour of a stone masonry bridge assessed using an implicit discrete element method, *Engineering Structures* 48 (2013) 739–749.
- Rafiee A., Gasc-Barbier M., Vinches M. Stochastic model generation for discontinuous rock mass media and numerical analysis using the NSCD method (Case study: Saint-Béat gallery in the southwest of France), October 2011, 12th ISRM Beijing, China
- Rafiee A., Application of Fractal Concentration-Area Model Based on Enrichment Factor to Delineate Geochemical Anomalies in Stream Sediment Surveys (Case study: Jebal-e-Barez 100,000 Sheet, Iran), 25th International Applied Geochemistry Symposium 2011, 22-26 August 2011 Rovaniemi, Finland
- Rafiee A., Vinches M., Dubois F., The Non-Smooth Contact Dynamics method applied to the mechanical simulation of a jointed rock mass, 7th European Nonlinear Dynamics Conference – ENOC, 24-29 July 2011, Rome, Italy
- RAFIEE A., VINCHES M., BOHATIER C. Discrete element modeling of the mechanical behavior of ordinary houses and masonry structures taking into account recorded earthquake accelerograms, International Conference Provence, Seismic risk in moderate seismicity area, 6-8 July 2009, Aix en Provence, France
- VINCHES M., RAFIEE A., BOHATIER C. Numerical analysis of the mechanical behavior under seismic loading of discrete element structures: Application to 3D fractured rock masses, and large stone course building, COMPDYN 2009, 2nd international conference on Computational Methods in Structural Dynamics and Earthquake Engineering, 22-24 June 2009, Island of Rhodes, Greece
- BOHATIER C., RAFIEE A., VINCHES M. Mechanical behavior under seismic loading of masonries including non-convex contact surfaces, COMPDYN 2009, 2nd international conference on Computational Methods in Structural Dynamics and Earthquake Engineering, 22-24 June 2009, Island of Rhodes, Greece
- RAFIEE A., VINCHES M. Application of Geostatistical Characteristics of Rock Mass Fracture Systems in 3D Model Generation, *International Journal Of Rock Mechanics & Mining Sciences*, Vol. 45, pp 644-652, 2008
- RAFIEE A., VINCHES M., BOHATIER C. Modelling and Analysis of the Nîmes Arena and the Arles Aqueduct, *Journal Engineering and Structures*, 2008, vol 30, No.12, pp 3457-3467
- RAFIEE A., VINCHES M., BOHATIER C. Application of the NSCD Method to Analyze the Dynamic Behavior of Stone Arched Structures, *International Journal of Solids and Structures*, 2008, vol 45, pp 6269-6283.
- BOHATIER C., RAFIEE A., VINCHES M. Surface Contact with Friction between Polyhydic Discrete Elements 6th EUROMECH (European Mechanics Society) – Non Linear Dynamic Conference: ENOC 2008, July 2008, St Petersburg, Russia.

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Webpage:

<http://rafiee77.googlepages.com/>

- RAFIEE A., VINCHES M., BOHATIER C. Application of the NSCD Method to the Stability Analysis of Jointed Rock Masses, 21<sup>st</sup> World Mining Congress, September 2008, Krakow-Katowice, Poland
- RAFIEE A., VINCHES M. Combination of the Geostatistical Analysis and the Geo-Structural Clustering Method to Generate a 3D Stochastic Model of Fractured Rock Masses 8th International Geostatistics Congress (GEOSTATS 2008), December 2008, Santiago, Chile
- RAFIEE A., VINCHES M., BOHATIER C. La méthode NSCD (Non-Smooth Contact Dynamics) appliquée à la simulation mécanique des massifs rocheux fracturés 26èmes Rencontres Universitaires de Génie Civil : Du laboratoire à l'ouvrage, Juin 2008, Nancy, France
- RAFIEE A., VINCHES M., BOHATIER C. Application of NSCD method to the modelling of fractured rock mass under seismic event, Computational methods in structural dynamics and earthquake engineering COMPDYN 2007 proceeding, Crete Island, Greece, June 2007
- RAFIEE A. Separating geochemical anomalies in stream sediment media by applying combination of fractal concentration-area model and multivariate analysis, Proceeding of 20th World mining congress, 461-472, November 2005, Tehran, Iran