Jag Singh

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CAREER PROFILE

CAREER SUMMARY

Ph.D. in rock mechanics with Master's in geology. Ten years of consulting and research experience in the areas of rock characterization and classification, soft sediment mechanics, strength criteria for rocks, physical and numerical modelling in geotechnics. Application areas: Slope stability, Strata control and Petroleum geomechanics. **OTHER**: Quality Assurance experience in software development environment since July 2002.

PROFESSIONAL SKILLS

Geotechnical / Engineering Geology

- Project formulation and evaluation and management
- Geotechnical site investigation
- Numerical modelling. Familiar with FLAC and proficient in UDEC of Itasca
- Instrumentation, non-conventional proto-type testing
- Experimental skills including MTS Systems operations
- Engineering geological skills, viz. X-ray diffraction, SEM, hemispherical projections, rock classifications
- Experimental scientific research skills including High-Tech testing systems
- Supervision of the recommended remedial fieldwork at the problematic sites

Quality Assurance, IT and Project Work

- QA testing and test procedure development.
- Assisting in Building, testing and packaging software releases
- Documentation: Doc Book, Emacs and WINDOWS based documentation
- Client liasing, product standards compliance and maintenance negotiations
- Linux/UNIX, Windows and DOS operating system

Other Skills

- Liaising with industry clients, viz. software companies, equipment manufacturers and material suppliers for purchase, tendering and warranty administration
- Public presentations of technical materials in meetings, seminars and conferences
- Technical report writing, research publishing, documentation and presentation

PERSONAL SKILLS

- Hard working with a strong commitment to work
- Effective communication and interpersonal skills
- Self-motivated and enthusiastic problem solving approach
- Multi-disciplinary teamwork orientation and independent working capabilities
- Innovative goal oriented approach towards work with lateral and creative thinking
- Highly developed conceptual and analytical skills
- Flexible, adaptable and a fast learner.

AREAS OF PROFESSIONAL CONSULTATION

- Rock slope engineering, landslide mitigation
- Petroleum geomechanics, sand production and laboratory support
- Multimedia Restoration and Archiving

RESEARCH INTERESTS

- Rock characterization, strength criteria for anisotropic rocks, rock mass classification
- Bearing capacity of fissured soils and jointed rocks
- Sand production and soft sediment mechanics.
- Multimedia Restoration and Archiving.

EMPLOYMENT HISTORY

Multimedia Consultant and Service Provider **July 2004 – Current**
Proprietor, Geolinks Australia, Sydney, Australia

- Filming Live Concerts, Multiple Cameras, Time Coded Video Editing
- Video & Audio Reproductions
- Multimedia Slideshow Production
- DVD Authoring with complex multiple VMG and VTS
- Media Restoration, Document and Data Archiving

Senior Geotechnical Assistant **Oct 2003 – May 2004**
Brink Associates Pty Ltd, Sydney Australia

- Report compilations – Compactions, SPT, Shear Box Tests
- Supervising Field Density Tests using Nuclear Gauge and Sand Replacement
- Reporting of Test Results

Quality Assurance Officer
GET Systems Pty Ltd, Sydney Australia **Jul 2000 – Mar 2003**

- Quality assurance testing of software and applications developed for clients
- Development and maintenance of QA documentation and test plans
- Assisting in building, testing and packaging software releases
- Help ensure that product QA is successfully completed in stipulated time and customer requirements.

Geotechnical Engineer
Barrick Goldstrike Mines, NV, USA **Jul 1999 – Oct 1999**

- Work in the area of slope stability – design, monitoring and as well as to oversee trim blast operations in one of the world's largest open pit gold mine in Nevada. Returned to Australia on the expiration of Visa in December 1999

Research Scientist **May 1998 – June 1999**
University of Oklahoma, OK, USA

- Experimental research in the area of sand production and soft sediment deformation
- Contributing in other projects that involve extensive laboratory experiments using MTS Systems
- Supervision of research and imparting training to the graduate students

Higher Education Officer
University of Sydney, Sydney Australia **Oct 1994 – May 1998**

- Research on bearing capacity of jointed rocks using numerical modelling (discrete element code, UDEC) and laboratory experimental work
- Participation in the industrial consultancy activities of the group
- Conducting tutorials and laboratory classes for students
- Liaison for the purchase of software, equipment and research material
- Inviting tenders, warranty administration and quality control
- Publishing the research findings and writing of technical reports.

Engineering Geologist
Shirley Consulting Engineers Pty. Ltd, Sydney, Australia **Jun 1997 – Sep 1997**

- Design of a major underground car park using numerical modelling and site investigation.
- Project on landslip zonation mapping. The work involved geological mapping and production of a landslip hazard classification map of the area.

Engineering Geologist
Railway Geotechnical Services, Sydney, Australia **Apr 1993 – Jul 1993**

- Geotechnical assessment of slope instability problems, identification of geotechnical hazards in

the field, suggesting design parameters and remedial options to mitigate geotechnical hazards.
- Field work, viz. mapping of slope profiles, rock discontinuities and structures controlling the cutting instability, geomorphologic characteristics of the catchment zones above the cuttings.
- Report writing for the clients and liaison for remedial works.

Engineering Geologist
Golder Associates Pty. Ltd, Sydney, Australia **Jan 1993 – Mar 1993**

- Bore hole logging and collection of structural geological and discontinuity data from a quarry site
- Performing pit wall stability analysis using software packages.
- Petrological analysis and rock mechanics testing.
- Conducting audits for environmental engineering projects and conducting site interviews

Scientist
Central Road Research Institute, New Delhi, India **Jun 1988 – May 1992**

- Geotechnical hazard identification for unstable slopes using structural geological mapping, assessing hydro-geological conditions and rock mechanics site analysis.
- Monitoring to interpret mass movements and data interpretation through modelling.
- Laboratory investigations of soil and rocks samples from the project sites.
- Proposing remedial options for hazard mitigation
- Supervision of remedial works.
- Performing rock mass classifications for the feasibility studies of underground roadways.
- Preparation of courses and imparting training to geologists and highway engineers during Refresher Training Programs.
- Liaison with equipment manufacturers, tendering and product evaluation.

Research Associate
Indian Institute of Technology, New Delhi, India **Jun 1987 – May 1998**

- Conducting studies on shear strength and deformation characteristics of intrinsically anisotropic rocks.
- Conducting rock mass classification for the feasibility studies of underground powerhouse and dam foundation at Chamera hydroelectric project in the Himalayan region.
- Experimental work in Equivalent Material modelling of underground excavations.
- Geotechnical instrumentation

QUALIFICATIONS

DEGREES

- PhD (Rock Mechanics)
- Master of Science (Geology)
- Honours in Bachelor of Science (Geology)

SHORT COURSES

2000: Computing- Visual Basic, SQL Server, ASP, HTML	Ashfield, Sydney, Australia
1998: Diploma in MTS System Operations	MTS Incorp, Minneapolis, USA
1993: Computers (Finite Element Analysis)	Sydney Inst of Tech, Australia

PROFESSIONAL AFFILIATIONS

- 1992: Member - Australian Institute of Geoscientists
- 1988: Member - Indian Society for Rock Mechanics and Tunnelling Technology
- 1983: Member - Indian Geotechnical Society

PROFESSIONAL ATTAINMENTS

- 1988: Prof. Leonard's Award for the best Ph.D. thesis in Rock Mechanics submitted to various Indian universities/institutes during that year
- 1989: IGS-HEICO Prize of the Indian Geotechnical Society for the best publication in rock mechanics in Indian Geotechnical Journal during the year.

HOBBIES AND INTERESTS

- Fitness, jogging and swimming
- Computer hardware
- Photography, audio/video editing
- Latest know-how of mechanical appliances, Multimedia Technology

REFEREES

Damian Morris
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Singh, J., Kanj, M., and Roegiers, J.-C. (Departmental Tech Report). Quantification of sand production using experimental and neural modelling.

Singh, J., Airey, D.W., Booker, J.R. and Carter, J.P. (1996). Model studies of the bearing capacity of an orthogonally jointed medium. First Int. Forum on Discontinuous Deformation Analysis. Berkeley, USA.

Ramamurthy, T., Singh, J. and Rao, G.V. (1993). Engineering behaviour of phyllites. Engineering Geology, Vol. 33, pp. 209-225. Elsevier, Amsterdam.

Ramamurthy, T., Singh, J. and Rao, K.S. (1990). Engineering Classification and Properties of Some Himalayan Rocks. Technical Report 43, Res. Scheme Applied to River Valley Projects. 123p. Published by Central Board of Irrigation and Power (CBI&P), New Delhi.

Singh, J., Ramamurthy, T. and Rao, G.V. (1990). A new methodology and instrumentation for laboratory studies of foliated rocks. Proc. 1st Int. Sem. on Soil Mechanics and Foundation Eng. of Iran, Tehran. Vol. 3, pp. 470-484.

Singh, J., Ramamurthy, T. and Rao, G.V. (1989). Strength anisotropies in rocks. Indian Geotech. J., Vol. 19, No. 2, pp.147-166.

Singh, J., Ramamurthy, T. and Rao, G.V. (1989). Strength of rocks at depth. Proc. Int. Sym. Rock at Great Depth, Pau, France. Vol.1, pp.37-44. Balkema, Rotterdam.

Ramamurthy, T., Rao, G.V. and Singh, J . (1988). A strength criterion for anisotropic rocks. Proc. 5th Australia New Zealand Conf. on Geomechanics, Sydney. pp.253-257. Inst. Engineers., Australia.

Major Technical Reports

Analysis and Correction of Rock Falls and Landslides on Thane - Kalyan - Ahmadnagar Road at Malshej Ghat, Thane. Report submitted by Central Road Research Institute, New Delhi to Public Works Dept., Bombay Region, Bombay.

Investigation of Landslide at Malling on Hindustan-Tibet Road. Report submitted by Central Road Research Institute, New Delhi to DGBR, Project Deepak, Shimla, Himachal Pradesh.

Six reports on "Downside Cutting Instability" for the State Rail Authority of New South Wales in Australia.