

## **Geotechnical Engineer**

**Experience** *Rock Mechanic and Numerical modeling.*

**Education** *Mining Engineer, 2001.  
Universidad de Santiago de Chile.*

*Industrial Engineer, 2006.  
Universidad Técnica Federico Santa María.*

*Candidate to Master in Geomechanic Applied to mining, 2014.  
Universidad de Los Andes, Chile.*

### **Profesional Experience**

2007 – Presente *Itasca S.A., Santiago de Chile, Geotechnical Engineer*

2004-2007 *Geo-tech Ltda., Santiago de Chile, Modeling Engineer.*

2003-2004 *Instituto de investigación en minería y metalurgia (IM2). Project Engineer – Rock Mass Pre-conditioning project.*

### **Project Experience**

*Numerical modeling applied to open pit and underground mining:*

- *Design and implementation of pre-conditioning program in underground mines in Codelco Chile (Andina, Salvador y Teniente).*
- *Gravitational Flow and fragmentation analysis using REBOP applied to pre-conditioning rock mass in Salvador Division, Codelco Chile.*
- *Design and slope stability analysis using 3DEC, UDEC and FLAC3D in different projects in Chile, Perú, Argentina, México, etc.*
- *Pillars stability analysis in underground mines in Chile, Argentina and Brasil.*
- *Presentation of over 10 courses, on numerical modeling methods: 3DEC, UDEC, FLAC3D in Chile, Perú and México.*

***Publications***

*Silva, R. & Vera, M. "Evaluación del flujo gravitacional para roca primaria explotada por hundimiento de paneles" Revista RIM, Volumen 3 - Número 5, Junio-Septiembre 2005 ISSN 0718-0071.*

*Silva-M,R. & Silva, R."Modelamiento numérico tridimensional sector Sureste, Rajo Rosario. Collahuasi". XVI Symposium de Ingeniería en Minas. Universidad de Santiago de Chile. Santiago Chile, 2009*

*Silva, R. "Case Studies of Numerical Modeling Applied to Underground Mining", Presentated in ISRM Congress, Goiania Brazil, 2014.*

*Gómez, P., & Silva, R. (2014, November 24). A Kinematic Analysis Tool for Slopes (KATS). International Society for Rock Mechanics. ISRM-SBMR-2014-003. Goiania Brazil, 2014*

*Silva, R., & Sergio, Y. "Herramienta de Análisis Cinemático para Taludes en Minas a Cielo Abierto (KATS)". VII Congreso Chileno de Ingeniería Geotécnica. Santiago Chile, 2014.*

*Ortiz, R., Silva, R. & Michalak, N. "Application of the Response Surface Methodology to 3DEC Analysis of Open Pit Slopes". In R.J. Rocca (Ed); Proc. of 8th South American Congress on Rock Mechanics, Buenos Aires, 2015.*

*Silva, R. & Gomez, P. 2015. "Towards a Mechanically Based Definition of the Disturbance Factor Using The "Slope Model Lattice Code". In R.J. Rocca (Ed); Proc. of 8th South American Congress on Rock Mechanics, Buenos Aires, 2015.*

*Silva, R. & Yañez, S. 2015. "Numerical Modeling as a Tool to Refine Bench Design in Open Pit". In R.J. Rocca (Ed); Proc. of 8th South American Congress on Rock Mechanics, Buenos Aires, 2015*

*Silva, R., Alvarez, C., Ledezma, R.& Díaz, M. "Creep Modeling as a means to Interpret the Behavior of the West Wall of the Chuquicamata Open Pit". In R.J. Rocca (Ed); Proc. of 8th South American Congress on Rock Mechanics, Buenos Aires, 2015.*