

## Zeryán Guerra. Applied Mining Engineer.

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### Introduction

I am a generalist professional, with 10 years of experience in project management in a wide range of activities, including underground and open-pit mining operation, mining construction, civil infrastructure construction, power plant construction (solar and hydro) and applied aerofluid dynamics engineering, among others.

I am very good at modeling projects and operations using MS Excel, which can feed another standard PM tools such as MS Project, Primavera and Presto, or any other. These models integrate budget, resource planning and project schedule in a single planning-and-control system, allowing to run simulations and forecasting, in order to provide valuable information for project management, such as budget and schedule accomplishment status; cost-of-change estimations; resources and people availability/saturation; economic and physical progress, among other required KPIs.

I also pilot light-drones, using this technology to control physical progress and to produce multimedia reporting.

I am native in Spanish and fluent in English (TOELF: 100/120. Advanced level).

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### Academic Background

2013. **Applied Mining Engineer**, Bachelor in mining, Universidad de La Serena.

2010. **Scholar**, University of Sciences and Technology of Cracow, Poland.

2004-10. **Assistant profesor** (Calculus, Thermodynamics, Topography y Mineralogy)

2003. 10th place in **Physics National Olympics**.

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### Job Experience

Oct/2020 to date. **Site Support Supervisor**, ENEL Green Power - Admiral, San Pedro de Atacama. Control and reporting of physical progress, refreshing long term planning and providing technical and administrative support to operations and contract management in the construction of Sol de Lila Photovoltaic Plant (161 MW; 180 MMUS\$).

Mar/2020 - Sep/2020 **Head of Technical Office**, BESALCO Energía Renovable S.A., Chillán. Control of physical and economic project progress of the construction of Pueblo Seco Substation (154kV-23kV); Engineering review, tendering management, contract management (more than 40 simultaneous supply contracts), QA/QC, cost control and reporting.

Mar/2019 - Feb/2020. **Technical Office Engineer**, BESALCO Energía Renovable S.A., Parral. Control of physical and economic project progress of the construction of Digua Dam Hydropower plant (20MW); Engineering review, tendering management, contract management, cost control and reporting.

Sep/2017 - Dec/18. **Project Development Engineer**, SAME S.A., Santiago. Commercial prospection and I+D project development focusing on aerofluid engineering applied to air pollutant control on industrial processes, such as acid mist control on electrowinning and dust control in crushing and conveyor belts, among others

Mar/2015 - Apr/2016. **Project Management Officer**, AP Construcciones S.p.A., Santiago. Commercial process standardization and scaling. Tender analysis and proposal development and negotiation. Progress and cost control of site operations. Successfully developed projects includes: Metro Franklin interstation tunnel excavation and supporting; Massive excavation

with plasma of Hidroñuble channel intake; Application of inner shotcrete coating in Kennedy Av. rainwater collector; Avalanche barrier installation to protect Tinguiririca hydropower plant feeding channel; among other minor works.

2014. **Head of Mining Operations**, Can-Can Mining Company (COPEC Group), Petorca, Chile. Underground mining long-term planning execution responsible, including, supervising drilling, blasting, loading, haulage and dumping operations. “El Bronce de Petorca” mine is a medium-scale high-grade gold deposit exploited by underground bench excavation and filling.

2013. **Operations Manager**, El Brillador Mine, Universidad de La Serena. Mining leasing contract management and open pit operations control. I also provided support to academic activities developed in the underground mining school, located right under open pit operations.

2012. **Head of Mines**, CEMIN Mining Holding, Chañaral. Leader of prospection, exploration and gold mining operations management; Responsible of ore supply of Falda Verde Cyanidation Plant, located in Chañaral.

2012. **Technical Office Engineer**, Consorcio TREPSA-Cerro Alto S.A., Rancagua. Reporting to the Project Manager, in the contract “Prestripping and Phase 1 of exploitation of Rajo Sur Mina” (Providing services to CODELCO, El Teniente). I was responsible of controlling contract execution progress, costs, and machinery performance.

2011. **Technical Office Engineer**, Chamuscada Mining Co., Canela Baja. Mining permits management, mining operations planning, cost control, ore quality control, metalurgical process design and supervision and general reporting. Chamuscada mine was a medium-scale high-grade deposit, owned and operated by my previous employer (Antolín Cisternas S.A.).

2009-2010. **Technical Office Assistant**, Antolín Cisternas S.A. Operations control, cost control and general support to the contract manager. Services provided includes: underground rock support, slope stabilization, underground tunneling with traditional drilling and blasting or NATM method.

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## Consultancy and Innovation Projects

2017. Innomine Tour, Germany. Invited by Fraunhofer Institute to participate in a technology transference journey through 13 of its Advanced Research Centers, to exchange experience in mining and metallurgy technology innovation. Selected by its **developments on copper-gold bearing ores cyanidation process**, aiming to recover dissolved copper on pregnant leaching solutions, considered a pollutant due to its high cyanide consumption and gold dissolution kinetics retardant, as a cyanide copper complex precipitate with commercial grade. This technology was develop during pre-grade thesis and following independent research.

2017. Kairos Capital Corp. (Canadian Junior Mining Company). “**Minor chilean salt lakes exploration and lithium exploitation pre-feasibility study**”, including mining property availability, historical literature review (1930 to date), mineral exploration concessions constitution, satellite imaging targeting exploration, on-site exploration campaign over 6 targets (systematic salt crust sampling and geochemical mapping), preliminar resources estimation and valuation, basic engineering development, preliminar feasibility analysis and investment proposal design.

2016. Kairos Capital Corp. “**Cobalt reserves exploration and surface mining pre-feasibility analysis and business strategy development of La Cobaltera mine**”, including owner-investors relation management, surface and underground exploration sampling, preliminary resources estimation, business valuation and investor proposal development.

2013-2015. AndesDigital.tv. Founder and Project Manager of **LATAM first eLearning platform for base level workers for mining industry**, providing safety and technical induction services. The company was acquired by classroomtv.com, US based corporate eLearning platform.

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## Publications

Mella, S.; Mella, J.; Guerrero, F.; Guerra, Z. (2018) **“Improvements in cross-flow ventilation and development of a new system for base metal electrowinning cellhouses”**, Proceedings of the 10th International Seminar on Process Hydrometallurgy. June 22, 2018. Stgo., Chile.

Mella, S.; Mella, J.; Guerra, Z.; Guerrero, F. (2018) **“Estudio de balances energéticos para desarrollar soluciones en ventilación y control de polvo en minas subterráneas”**, Congreso Iberoamericano en Minería Subterránea y Cielo Abierto. June 14, 2018. Stgo., Chile.

Mella, S.; Mella, J.; Guerra, Z.; Guerrero, F. (2018) **“Development of extraction hood and cross-flow ventilation system for acid mist control in base metals electrowinning”**, Proceedings of the 23rd Annual Conference & Exhibition of Nickel-Cobalt-Copper, Uranium-REE-Lithium and Gold-PME Hydrometallurgy. May 23, 2018. Perth, Australia.

Mella, S.; Mella, J.; Guerrero, F.; Moraga, V.; Espinosa, F. and Guerra, Z. (2018) **“Air Quality in Mining Industry: A Disruptive Paradigm”**, Proceedings of the 3rd International Seminar on Operational Excellence in Mining. March 21, 2018. Santiago, Chile.

Guerra, Z. (2013). **“Proof of concept of copper recovery leaching pregnant solutions of gold-copper bearing ores cyanidation process”**, Applied mining engineering thesis. University of La Serena. July 2013. La Serena, Chile.