

Exequiel Sepúlveda Escobedo

RESEARCHER - DATA SCIENTIST · PHD IN MINING ENGINEERING

☎ (+61) 404138379 | ✉ esepulveda@protonmail.com | 📱 exepulveda | ^RG Exequiel_Sepulveda | 📺 exequielsepulveda

Affiliations

Postdoctoral Researcher Fellow

The University of Adelaide, Australia

MAY 2018 - TO DATE

Adjunct Academic

University of Talca, Chile

MARCH 2018 - TO DATE

Education

School of Civil, Environmental and Mining Engineering (The University of Adelaide)

Adelaide, Australia

PHD IN MINING ENGINEERING

2014 - April 2018

- Dean's Commendation for Doctoral Thesis Excellence.
- Supervisors: Peter Dowd, Chaoshui Xu.
- BecasChile Scholarship.

School of Computer Science (University of Chile)

Santiago, Chile

B.S. IN COMPUTER SCIENCE AND ENGINEERING

1989 - 1994

Queensland University of Technology

Brisbane, Australia

AMSI WINTER SCHOOL

Jun 2017

- Bayesian Inference & Data Assimilation.
- High-Dimensional Statistics.
- Inverse Problems.
- Machine Learning.
- Nonlinear Optimisation.
- Numerical Linear Algebra.

Journal Publications

Prediction of copper recovery from geometallurgical data using D-vine copulas

JOURNAL OF THE SOUTHERN AFRICAN INSTITUTE OF MINING AND METALLURGY

2019

Addo, E., Meltcalfe, A., Chanda, E., Sepúlveda, E., Assibey-Bonsu W. & Adeli, E. (2019). Prediction of copper recovery from geometallurgical data using D-vine copulas, On-line. DOI: 10.17159/2411-9717/319/2019

Fuzzy Clustering with Spatial Correction and Its Application to Geometallurgical Domaining

MATHEMATICAL GEOSCIENCES

2018

Sepúlveda, E., Dowd, P. A. & Xu, C. (2018). Fuzzy Clustering with Spatial Correction and Its Application to Geometallurgical Domaining. Mathematical Geosciences, 50(8), 895-928. DOI: 0.1007/s11004-018-9751-0

The optimisation of block caving production scheduling with geometallurgical uncertainty – a multi-objective approach

MINING TECHNOLOGY

2018

Sepúlveda, E., Dowd, P. A. & Xu, C. (2018). The optimisation of block caving production scheduling with geometallurgical uncertainty – a multi-objective approach. Mining Technology, 1-15. DOI: 10.1080/25726668.2018.1442648. Mann Redmayne Medal, for the best paper published in IMM Transactions A.

Multivariate Modelling of Geometallurgical Variables by Projection Pursuit

MATHEMATICAL GEOSCIENCES

2017

Sepúlveda, E., Dowd, P. A., Xu, C. & Addo, E. (2017). Multivariate Modelling of Geometallurgical Variables by Projection Pursuit. Mathematical Geosciences, 49(1), 121-143. DOI: 10.1007/s11004-016-9660-z

A preliminary study on the role of acoustic emission on inferring Cerchar abrasivity index of rocks using artificial neural network

WEAR

2015

Perez, S., Karakus, M. & Sepúlveda, E. (2015). A preliminary study on the role of acoustic emission on inferring Cerchar abrasivity index of rocks using artificial neural network. *Wear*, 1(8), 344-345. DOI: 10.1016/j.wear.2015.10.006

Conferences

15th International Mineral Processing Conference - 6th International Seminar on Geometallurgy

Santiago, Chile

CO-AUTHOR AT GEOMET 2019

Nov. 2019

- An overview of good practices in the use of geometallurgy to support mining reserves in copper sulfides deposits.

14th International Mineral Processing Conference - 5th International Seminar on Geometallurgy

Santiago, Chile

CO-AUTHOR AT GEOMET 2018

Dec. 2018

- A Methodology for the Simulation of Synthetic Geometallurgical Block Models of Porphyry Ore Bodies.

CRC Ore 2018

Brisbane, Australia

PRESENTER AT CRC ORE ANNUAL ASSAMBLY 2018

Nov. 2018

- Heterogeneity Index for grades.

18th International Association for Mathematical Geosciences Conference

Perth, Australia

PRESENTER AT IAMG 2017

Sep. 2017

- Spatially constrained clustering of geometallurgical variables.

18th International Association for Mathematical Geosciences Conference

Perth, Australia

CO-AUTHOR AT GEOMIN-MINEPLANNING 2017

Aug. 2017

- Optimization of planning and scheduling of ore body with open pit extraction considering homogeneity in clays as geometallurgical variables.

3rd International Seminar on Geometallurgy

Lima, Perú

PRESENTER & CO-AUTHOR AT GEOMET 2016

Dec. 2016

- Optimization of Production Scheduling under Geometallurgical Uncertainty in an Underground Mining Operation (presenter).
- A case study of geometallurgical modelling of metal recovery with unequal sampling (co-author).

11th International Mineral Processing Conference

Santiago, Chile

PRESENTER AT PROCEMIN 2015

Oct. 2016

- Modelling geometallurgical response variables using Projection Pursuit regression.

V Latin American Symposium on High Performance Computing

Buenos Aires, Argentina

CO-AUTHOR AT HPCLATAM 2012

Jul. 2012

- Improve an efficient simulation of multidimensional Gaussian random fields in GPU.

9th Conference on Geostatistics for Environmental Applications

Valencia, España

CO-AUTHOR AT GEOENV 2012

Jul. 2012

- Parallelization of simulation algorithm with GPU for constructing high resolution models of Earth Sciences variables.

4th International Conference on Mining Innovation

Santiago, Chile

PRESENTER AT MININ 2010

Jun. 2010

- Distributed-Multiprocess Implementation of Kriging for the Estimation of Mineral Resources.

3th International Conference on Mining Innovation

Santiago, Chile

PRESENTER AT MININ 2008

Aug. 2008

- Innovations in Software Development for Resource Evaluation.

Experience

School of Civil, Environmental and Mining Engineering, The University of Adelaide

Adelaide, Australia

POSTDOCTORAL RESEARCHER FELLOW

August 2019 - currently

- Full-time researcher.
- Rapid Resource Model Updating.

School of Civil, Environmental and Mining Engineering, The University of Adelaide

Adelaide, Australia

POSTDOCTORAL RESEARCHER FELLOW

April 2018 - July 2019

- Full-time researcher.
- Heterogeneity Index for Grade Engineering.

School of Civil, Environmental and Mining Engineering, The University of Adelaide

Adelaide, Australia

TUTOR

April 2019

- Tutor of the course 'Advanced Modelling in Hydrology'.

School of Civil, Environmental and Mining Engineering, The University of Adelaide

Adelaide, Australia

TUTOR

2015 - 2019

- Tutor of the course 'Engineering Analysis and Modelling'.

Research Services, The University of Adelaide

Adelaide, Australia

HPC SUPPORT & ANALYST

June 2015 - March 2018

- Part of support team helping researchers to use HPC Phoenix system.
- Deliver workshops and tutorials in HPC.

ALGES Research Centre

Santiago, Chile

ASSOCIATE RESEARCHER / SENIOR SOFTWARE ENGINEER

March 2006 - Aug. 2013

- Work in a multidisciplinary team to produce high level mining software.
- Work with the Head of School of Mining Engineering to propose the budget.
- Mentor junior programmers.
- Organise and deliver workshops and tutorials for university community.
- Report to the Head of School of Mining Engineering projects status.
- Participate in staff and management meetings on a weekly basis.

Gestion Informática

Santiago, Chile

INDEPENDENT CONSULTANT (SOFTWARE ENGINEERING)

2004 - 2006

- Consultant for important companies of business, financial and telecommunications sectors on software engineering.
- Work with the IT team of customer.
- Supervise junior programmers.
- Evaluation and management of project portfolio.

PC BOOK

Santiago, Chile

CO-OWNER (LAPTOP SALES COMPANY)

2000 - 2004

- In charge of IT services for sales force and backoffice.
- Head of technical support area.
- Participate in direction and management meetings on a monthly basis.

ING Insurance

Santiago, Chile

IT PROJECT MANAGER)

1998 - 1999

- IT project manager for life insurance area.
- In charge of a software developing group of 4 people.

Skills

Mining Geometallurgy, Resource Evaluation, Mine Planning.

Maths Statistics, Optimisation, Geostatistics.

Computer Science Advanced Algorithms, Machine Learning.

Software Engineering Fullstack, Cloud Computing, Software Engineering, Object Oriented Programming.

Machine Learning Regression, Classification, Clustering, Artificial Neural Networks.

Programming Languages C, C++, Fortran, Python, JAVA, and many others.

High Performance Computing MPI, OpenMP, CUDA.

Scripting Python, Matlab, R, Javascript

Languages English (7.0 IELTS), Native Spanish.