Christopher C. Thielsen

ITASCA Consulting Group, Inc.
An Itasca International Company

Geomechanics Engineer

Expertise Numerical Modeling of Geomechanics, Machine Learning Methods and Techniques

Education

M.S. (Geoengineering, Machine Learning), 2021
University of Minnesota, Minneapolis, MN

B.GeoE. (Geoengineering), 2020
University of Minnesota, Minneapolis, MN

Registration Engineer in Training (EIT), Minnesota

Professional Affiliations

Member: American Society of Civil Engineers (ASCE),
Society of Mining, Metallurgy, & Exploration (SME)

Officer: Minnesota Geotechnical Society (MGS-GI)

Awards 2021 Tekne Award: Innovation in Artificial Intelligence and Machine Learning Advances Safety and Efficiency in Wind Energy Construction

Professional Experience

Itasca Consulting Group, Inc., Minneapolis, Minnesota

2021 – Present *Geomechanics Engineer*
2020 – 2021 *Engineering Intern*

2019 – 2021 *University of Minnesota, Minneapolis, MN*
Teaching & Research Assistant

2019 – 2019 *American Engineering Testing, St. Paul, MN*
Engineering Technician Intern

Project Experience

Machine Learning Model Development for Underground Mining: Developed a workflow to predict intact rock strength using random forests trained with a combination of point load test (PLT) data and comprehensive borehole logs. This workflow is used to predict rock mass strength variation at large cave mines where full coverage with point load tests would be cost prohibitive. Developed a methodology to train machine learning based surrogate models using synthetic data generated by numerical models. Itasca was awarded the 2021 Tekne award for the application of these surrogate models to construction crane bearing capacity analysis.

Numerical Analysis for Practical Geo-engineering Application: Developed and applied numerical models in a variety of practical geo-engineering studies including slope stability analyses, open pit blasting analyses, and sublevel caving blasting analyses.

Geomechanics Consulting: Used Itasca software to give design recommendations and insights into the mechanical behavior of rock in the engineered environment to a variety of customers in the mining, civil, and energy industries.