Curriculum Vitae

Sofia Pozsonyiova

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Education

Macalester College, St. Paul, MN   Bachelor of Arts: Expected May 2020
Major: Applied Mathematics and Statistics
Concentration(s): Data Science, Community and Global Health

Work Experience

Arundel Metrics   August 2018 - Present
Undergraduate Intern, St. Paul, MN
- Assisting in the compilation of America's Health Rankings 2020 Annual Report
- Tasks include analyzing, interpreting and visualizing complex health, economic and social data to improve the health and well-being of individuals and communities

Macalester College Financial Aid   August 2018 - Present
Office Assistant, St. Paul, MN
- Help process financial aid applications and transcripts; prepare and maintain student folders
- Provide applications, information, and assistance to students regarding available financial aid programs, such as grants, loans, scholarships, and work-study jobs
- Review financial aid application forms for accuracy and completeness; secure additional information from students as necessary.

Mercer Consulting   June 2019 - August 2019
Non-Actuarial Analyst Intern, Minneapolis, MN
- Analyzed the quality of care and access to state Behavioral Health Services through the evaluation of a state's Medicaid Fiscal and Calendar Year budget
- Completed comprehensive analysis and data validation of large state health care data sets using Excel spreadsheet and SQL database management software
- Assisted in the development of State Medicare Rate Cells communications, proposals, reports, spreadsheets, and presentations

Leaf Your Mark   April 2015 - September 2017
Co-Founder and Co-President, Fort Lauderdale, FL
Mission: To teach kids about the importance of environmental conservation through unique hands on activities while empowering them to see that they can create a better tomorrow.
- Established and developed activities for the non-profit: Created business plans, lead a team of educators, and developed marketing approaches
- In addition, helped expand revenue generation, upheld communications with local districts and designed and maintained websites

Research Experience

Dr. Prasoon Diwakar's Research Team,   May 2019 - Present
Remote Data Analyst, Purdue University, IN
- Continuation of data analysis projects conducted at Frost Science Museum
- Implementing new Machine Learning Algorithms to classify different samples; Soil, Ore, Gases, and Carcinogens
- Assisting high school students at Ransom Everglades in analyzing and classifying their LIBS Spectra data

Frost Science Museum   November 2018 - May 2019
Data Analyst and Research Intern, **Carcinogen Program***,* Miami, FL
- Led the Statistical and Data analysis for the Inventors in Residence Carcinogen Research Team
- Designed new methods to more efficiently classify complex emission spectra data through the application and integration of Statistical Modeling and Machine Learning
- Currently aiding in the creation of a new technique to bridge Statistical Modeling and Machine Learning to LIBS
- Publication in Progress: "Bridging the Gap: Application of Statistical Models and Machine Learning techniques for more effective classification of LIBS Spectra Data"

The Institute for Nano biology and Structural Biology   June 2018 - August 2018

Computational Research Assistant*,* Nove Hrady, Czech Republic
- Granted Taylor Hill Public Health Fellowship
- Used computational modeling and in lab PAPSS expression to gain a better understanding of the structural and functional consequences of the PAPSS2(b) DNA mutation
- Research improved the molecular understanding of diseases caused by deficiency in intracellular sulfate in the recessive disorder osteochoendrodysplasia
- Attended the 8th annual Visegrad Symposium on Structural Systems Biology in Lucenec, Slovakia
- Completed FEBS Advanced Course in Ligand-binding and practice
- Poster: "Assisted Expression, Purification, and Stabilization of PAPSS: 3'-Phosphoadenosine 5'-Phosphosulfate-Synthase"

Frost Science Museum   June 2017 - December 2017
Research Intern*,* Miami, FL
- Undergraduate research assistant for the Inventors in Residence Carcinogen Research Laboratory
- Assisted in the development of portable LIBS laser systems to aid in near-real time detection of environmental carcinogens with the goal of improving human health through limiting exposure
- Research also included a Multivariate Analysis of Complex Samples using Atomic and Molecular Emission Spectra

Fellowships

Taylor Hill Public Health Full Fellowship (Summer 2018)

Teaching Experience

Teaching Assistant

Spring 2018 Semester: INTL 282 Introduction to International Public Health (One Section)
Spring 2019 Semester: Math 253 Statistical Modeling and Machine Learning (Two Sections)
Fall 2019 Semester: Math 253 Statistical Modeling and Machine Learning (Two Sections)

- Held regular office hours and private sessions to provide students with academic and software support
- Graded assignments, quizzes, and exams, and used the technology-based tracking and assessment platform of Moodle

Publications

In Preparation
- **1. Pozsonyiova S.**, Diwakar P.K, Fernandez M., Orme E. "Bridging the Gap: Application of Statistical Models and Machine Learning techniques for more effective classification of LIBS Spectra Data"
- **1. Pozsonyiova S.**, Diwakar P.K, Fernandez M., Orme E. "Classification of toxic soils through the application of Machine Learning Models to LIBS Spectra Data"

Presentations

Poster(s):
2019 SCIX International Conference
Palm Springs, CA
- **1. Pozsonyiova S.**, Diwakar P.K, Fernandez M., Orme E. "Bridging the Gap: Application of Statistical Models and Machine Learning techniques for more effective classification of LIBS Spectra Data"

Macalester College's 2020 Public Health Fair
St. Paul, MN
- **1. Pozsonyiova S**., Grinkevich P., Ettrich R. "Assisted Expression, Purification, and Stabilization of PAPSS: 3'-Phosphoadenosine 5'-Phosphosulfate-Synthase"

Projects

Outside Research Projects
- Application of Machine Learning Classification Methodology to More Effectively Classify LIBS Spectra Data Obtained from Soil Samples (In Progress)
- Applying Machine Learning Classification Methods to LIBS Experiment Data in a High School Setting to Promote STEM Education (In Progress)
- Use of LIBS Spectra Data and Machine Learning Techniques to Detect Carcinogenic Material Within Electronic Cigarettes (Winter 2018)
- Application of Computational Models to Understand the Structural and Functional Consequences of the PAPSS2(b) DNA Mutation (Summer 2018)
- Multivariate Analysis of Complex Samples Using Atomic and Molecular Emission Spectra (Summer 2017)

Major Semester Research Projects

- Do Babies Hold the Key to Our Hearts? A look Into the Rffect of Pregnancy on a Women's Average Heart Rate (Epidemiology: Fall 2018)
- Introduction of Biomedicine in Peru, and its Order of Treatment in Rural and Urban Areas (World Healing: Spring 2018)
- Toughness Redefined: Analysis Behavioral Health Resources for Macalester Student Athletes (Health Psychology: Fall 2017)

Leadership & Service

Community Leadership

Women in Machine Learning & Data Science, Minneapolis, MN	July 2019 - Present
RLadies, Minneapolis, MN	February 2019 - Present
Minnesota Science and Business Association, Minneapolis, MN	January 2017 - January 2018

On-Campus Leadership

Children's Miracle Network, *Event Chair*, St. Paul, MN	September 2017 - Present
First Generation to College Network, St. Paul, MN	September 2018 - Present
Varsity Swim Team, St. Paul, MN	September 2016 - May 2017

Skills

Technical

R (Research Proficiency), Git, HTML, Python3, SQL, Microsoft Office Packages

Language

English (Full Proficiency), Slovak (Full Proficiency), Czech (Working Proficiency)