

*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 2019 - 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 Hradý, 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 osteochondrodysplasia
- ♦ 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: Introduction to International Public Health (One Section)

Spring 2019 Semester: Statistical Modeling and Machine Learning (Two Sections)

Fall 2019 Semester: 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**

Saint 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 obtain from soil samples (In Progress)
- ♦ Applying machine learning classification methods to LIBS experiment data in a high school setting to promote STEM education (Current Project)
- ♦ Use of LIBS spectra data and Machine Learning 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 effect 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, Python3, SQL, Microsoft Office Packages

### **Language**

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