Arun **Suresh**

University of Missouri - PhD candidate (Mathematics)

Interactive resume

Tableau version (click here)

About me

PhD candidate in Mathematics at the University of Missouri, passionate about leveraging mathematical expertise in the realm of data science. Accomplished researcher with three papers, possessing strong leadership skills backed by community development. Enjoys tackling challenges in dynamic work settings.

Languages

Tamil (Native)
English (Proficient)
Japanese (Beginner)
LaTeX (Joke)

Areas of specialization

- Applied Algebraic Geometry
- Topological Data Analysis
- Math for data science
- Numerical Analysis
- Statistical Learning

Soft Skills

- Leadership
- Work ethic
- Communication
- Initiative

Libraries and tools

`Tidyverse, Dplyr, Ggplot2.r`
`Pd, Pytorch, Giotto-tda.py`
`Flux, Plots.jl`
`Reports:` LaTeX, Markdown
`Visualizations:` Tableau
`Microsoft Office suite`
`Google Sheets/Docs/Slides`

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/arunbsuresh

References available upon request.

Research Positions

Jun'23–Aug '23 — **University of Missouri - Department of Mathematics**
Graduate Research Assistant · Columbia, MO
Worked with Dr. Dan Edidin to derive tight sparsity bounds for signal recovery from phaseless measurements, with signals given in a generic (wavelet) basis. Manuscript submitted for review in the journal of Applied and Computational Harmonic Analysis. Collaborated on a second project concerning signal recovery from phaseless measurements, given that the measurements are the output of a neural network equipped with a semialgebraic (ReLU) activation function. Manuscript submitted for review in SIAM journal on Mathematics Of Data Science.

Jan'18–Dec'20 — **Georgia State University - Honors College**
University Assistant · Atlanta, GA
Supported by Georgia State Honors College to conduct research in pure mathematics under the mentorship of Dr. Florian Enescu. Worked on a project concerning semigroup rings that eventually was accepted for publication in the journal *Communications in Algebra*

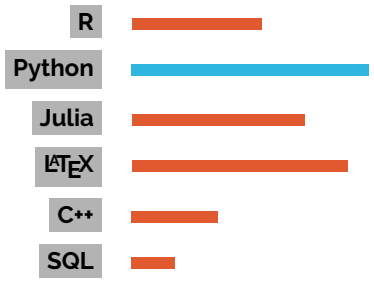
Degrees

2021-Now — **Mathematics**
PhD · Uni. of Missouri

2020-2021 — **Mathematics**
M.S. · Georgia State Uni.

2016-2019 — **Mathematics**
B.S. · Georgia State Uni,

Programming



Projects

Jan 2024 — **Harvest the sun! Optimizing solar practicality in the US**
Google Data Analytics - Capstone project · Online
Used Google data from Project Sunroof to create track-able indices that predict state/zip wide cost-impact-economic practicality of installing solar panels to the median household. Read More!

May 2020 — **Compressed Sensing using proximal gradients and wavelets**
Python library · Online
End of semester project done as a part of the numerical analysis reading group at Georgia State Unviersity, led by Dr. Xiaojing Ye. Report

May 2020 — **Numeripy**
Python library · Online
Python numerical methods package featuring a robust selection of numerical ODE-solvers, matrix factorization and numerical linear algebraic methods. Check it out!

Certificates & Grants

Dec 2023 Adv. learning algorithms
Jan 2024 Google Data Analytics

Publications

Subm. *Phase ret. from semi-alg and ReLU nn. priors*, SIMODS. (talk)
Subm. *Generic crystallographic phase retrieval problem*, ACHA.
2021 *The generators relations and type of the Backelin semigroup*, Communications in Algebra.

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