Krishna Chebolu

St. Louis, Missouri, USA 614-973-2159 kris.chebo@gmail.com Krishna Chebolu Portfolio

Education

University of Missouri-Columbia **2024 – Present**
M.S. Applied Mathematics *Columbia, MO*

Truman State University (TSU) **2020 – 2024**
B.S. Mathematics | Minor in Computer Science *Kirksville, MO*
Cumulative GPA: 3.93/4.00, Major GPA: 4.00/4.00 | Graduated *Summa Cum Laude*

Research & Work Experience

Summer Geometry Initiative, Massachusetts Institute of Technology **Summer 2024**
Geometry Processing Research Fellow *Boston, Massachusetts*

- Performed Topological Data Analysis methods on OpenAI's CLIP model to test robustness. Access write up.
- Dove deep into and tested many Simultaneous Localization and Mapping (SLAM) systems. Blog post.

Bolton Lab, Washington University in St. Louis **Spring & Summer 2024**
Computational Cancer Genomics Research Intern *St. Louis, Missouri*

- Built scripts to analyze genomic pipeline filters that resulted in removing 2 filters; boosted processing speed.
- Compared large (1M+ rows) datasets to understand lab models' efficacy; explicitly found all TPs, FPs, TNs, & FNs.
- Presented findings to lab members are relevant personnel: found out the cause of each T/FP & T/FN.

On Nonlinear Time Series Analysis and Climate Variability **Summer & Fall 2023**
Student Researcher — Access paper *Kirksville, Missouri*

- Designed and conducted a self-driven comprehensive study, reviewing over 150 academic papers and articles.
- Topics include Chaos theory, fractals, state-space reconstruction, and delay-coordinate embedding.
- Synthesized and distilled key findings, creating a foundational resource to facilitate newcomers into the field.

Oklahoma Bombers Financial Operations, The Boeing Company **Summer 2022**
Finance Intern *Oklahoma City, Oklahoma*

- Optimized B1, B2, B52, ALCM, & Multiplatform aircraft initiatives by restructuring data for 60+ spending plans.
- Filled knowledge gaps in 20+ reports and spending plans by seeking out Points of Contact and obtaining explanations.
- Saved 100 hours of company time and decreased the time spent generating spending plan reports.

Phantom Works Estimating Department, The Boeing Company **Summer & Fall 2021**
Finance Data Analysis Intern *St. Louis, Missouri*

- Conducted a comprehensive regression and sensitivity analysis on 18 Cost-Estimating Relationships (CERs).
- Boosted accuracy by over 20% on average by generating 60-70 alternates; 3 CERs had a 50% boost.
- Synthesized and presented findings to management for further research– continued by full-time employees.

Projects

SurfNote **Spring 2024**

- Built a Google Chrome extension for note-taking while surfing on the web. Available on the webstore.

WorldNews, An Immersive Map-Based News Application **Fall 2023**

- Designed and built a web application to obtain top worldwide news as custom markers on a map.
- Integrated Google Maps API, Google Street View API, and Aylien News API into a .Net framework.

Human-Animal Relationships in Maasai Mara Game Reserve **COMAP 2023**

- Task: Identify alternate ways to manage resources in the Maasai Mara reserve and use math to inform policy changes.
- Built a complex network of human-animal relationships using thirteen variables & six equations.
- Reported 8 policy changes; e.g. for the environment, increasing human settlements is better than letting cattle graze.

Developing a Day-to-Day Trading Strategy **COMAP 2022**

- Developed a model to buy/sell assets based on only the asset price with transaction fees.
- Optimized model using other price data sets: Ethereum (1400% value gain w/ model), Pfizer (160%), and Gold (130%).

Selected Talks & Presentations

2024 Foundations of Nonlinear Time Series Analysis, *American Mathematical Society Spring, U of Wisconsin-Milwaukee*
2023 On Nonlinear Time Series Analysis & Climate Variability, *Mathematics Capstone Seminar, TSU*
Human-Animal Relationships in Maasai Mara Game Reserve, *Student Research Conference, TSU*
2022 Tea Time with Sue: Krishna Chebolu, Episode 4, *University talk show with university president Dr. Susan Thomas*
Developing a Bitcoin and Gold Portfolio Manager, *Student Research Conference, TSU*
2021 Seeing Where the Real Buzz Is, *Student Research Conference, TSU*

Awards & Honors

2024 McFarlan Endowed Scholarship, University of Missouri-Columbia
Symposium on Geometry Processing Travel Grant, Massachusetts Institute of Technology
Graduation Speaker for the Center for Diversity & Inclusion, TSU
2023 Bulldog B.I.T.E. Business Pitch Competition 2nd Place Winner, TSU
Outstanding Residence Leadership for Exceptional Service to the University Community, TSU
Top Presenter, University of Northern Iowa
2022 The Boeing Scholarship for Mathematics, Statistics, and Computer Science, TSU
2021 The Boeing Scholarship for Mathematics and Computer Science, TSU
Dr. Susan LaGrassa Scholarship for Mathematics, TSU
2020 President's Honorary Scholarship for Full Tuition, TSU

Recurring
2020 - 2024 President's List for Academic Excellence, TSU
2021 - 2023 Successful Participation in the Consortium for Mathematics and its Applications

Works

2023 On Nonlinear Time Series Analysis and Climate Variability — Literature Review

Skills

Technical: Python, R, LaTeX, C++, Adobe PhotoShop, Microsoft Excel, GAP, JS, CSS, HTML, Bash, WDL
Usage: React Native, Dockerhub, GitHub, BitBucket, Jira

Leadership & Service

Phi Beta Kappa: Member — 2024 - Present
American Mathematical Society: Sponsored Member — 2023 - Present
South Asian Student Union, TSU: Founding President and Treasurer — 2023 - 2024
Student Government, TSU: Voting Senator, Environmental Affairs — 2020 - 2022