KASHIF BARI

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EXECUTIVE SUMMARY

PhD trained experimental mathematician with research background in writing code for investigating and proving conjectures about the underlying structures within the geometry of tensors. Looking for opportunities to combine my love of code and mathematics in a real world setting.

SKILLS

High Proficiency: Python, C++, Git, R, MATLAB, Linux, SLURM
Medium Proficiency: AWS (EC2, S3), Apache Airflow, GCS, Google BigQuery, SQL, HTML
Low Proficiency: Docker, Apache Spark

WORK EXPERIENCE

· **Analyst at Metron, Inc** *January 2022 - Present*

Classified work within ORCA Operations Research and Cyber Analysis) division.
Worked within the following domains: Bayesian tracking algorithms, Signal Processing, Deep Learning, Ontology Engineering.

· **Data Science Consultant at Bella Vista Health Center** *June 2021 - October 2021*

Contract position for constructing data pipelines to automate statistical analyses and data visualization.

· **Mathematics Graduate Assistant at Texas A&M University** *August 2015 - May 2021*

Used Python to experimentally investigate tensor ranks and border ranks in conjunction with ideas from representation theory and algebraic geometry to theoretically confirm conjectures in Complexity Theory. Used Texas A&M High Performance Computing cluster (SLURM manager) to run Python code.

Leading recitations in Engineering Calculus I and II as well as teaching Python and MATLAB to Engineering students in the context of Calculus; Graded for Introduction to Proofs, Applied Algebra for Math Majors, and Graduate Algebra I and II (Qualifying Exam courses)

PROJECTS

Erdös Institute Qarik Corporate Project: Learning from World Bank Loan Documents *Fall 2021*

Looking for insights into economic and development trends over decades from unstructured dataset. Relevant domain knowledge: NLP (NLTK), OCR (Tesseract), Data Engineering, Visualisation (Seaborn), Topic Analysis Clustering (Doc2Vec, LDA)

Erdös Institute Mentor Program *Spring 2021*

Mentored three groups of PhD students in Computer Vision and Image Classification Machine Learning Models.

EDUCATION

Texas A&M University *August 2015 - May 2021*
PhD in Mathematics, Dissertation: On the Structure Tensor of $\mathfrak{sl}_n$

San Diego State University *August 2012 - June 2015*
M.A. in Mathematics, Thesis: A Commutative Algebraic Approach to Hamiltonians and Graphs

University of California, San Diego *August 2008 - June 2012*
B.S. in Mathematics, Minor in Music

PUBLICATIONS

K. Bari, *On the Structure Tensor of* $\mathfrak{sl}_n$, arXiv:2105.08171, **Linear Algebra and Its Applications**, *Submitted for Initial Review*

K. Bari and M. O'Sullivan, *The Hamiltonian problem and t-traceable graphs*, **Involve**, DOI: 10.2140/involve.2017.10-5