Hamid Shafieasl

PhD Student in Computer Science (Data Science), University of Utah
Salt Lake City, UT, USA
hamidmath2013@outlook.com

Google Scholar | Website | LinkedIn | Math StackExchange (Reputation 3035)

Professional Summary

PhD student in Artificial Intelligence with a prior PhD in Mathematics (Harmonic Analysis). Strong analytical background with experience in high-dimensional data analysis, graph algorithms, sampling methods, reinforcement learning, and computational geometry. Skilled in Python, algorithmic reasoning, and developing mathematically grounded methods for data-driven problems.

Education

- **Ph.D. in Computer Science**, University of Utah *Expected 2029*
- **Ph.D. in Mathematics**, Azerbaijan Shahid Madani University 2019
- **M.Sc. in Mathematics**, Azerbaijan Shahid Madani University 2011
- **B.Sc. in Mathematics**, Azad University of Tabriz 2009

Graduate Coursework

- High-Dimensional Data Analysis
- Data Mining
- Artificial Intelligence
- Machine Learning

Technical Skills

- **Programming:** Python, object-oriented programming, numerical computing
- **Data & Algorithms:** high-dimensional data handling, noise reduction, sampling methods for signals, graph algorithms (PageRank, Dijkstra), search strategies, optimization techniques
- **Machine Learning & AI:** supervised/unsupervised learning, reinforcement learning (policy search methods), model evaluation
- **Computational Geometry & Shape Analysis:** geometric reasoning, classification of star-shaped vs. non-star-shaped structures, curve and surface analysis
- **Mathematics:** harmonic analysis, linear algebra, probability, differential equations, complex analysis, discrete mathematics
- **Tools:** NumPy, SciPy, Matplotlib, Rhino–Grasshopper (rhinoscriptsyntax)

Research & Projects

- **Computational Geometry (Submitted Paper).** Developed a new interdisciplinary framework for analyzing star-shaped and non-star-shaped 2D objects. Combines mathematical structure with algorithmic computation for shape recognition and geometric decision problems.

- **Geometric Origami Modeling.** Used Python and Rhino–Grasshopper to model curved origami structures, contributing to published research in geometric computation.
- **Discrete Curve Geometry.** Studied curvature and torsion of discretized curves with applications in CAD, graphics, and geometric modeling.

Professional Experience

- **Python Instructor**, Private Institutes 2020–Present
  - Taught Python with emphasis on data workflows, algorithms, and machine learning fundamentals.
- **Mathematics Lecturer**, Azerbaijan Shahid Madani University 2010–2018
  - Taught Linear Algebra, Calculus, Analysis, Differential Equations, Complex Functions, and Discrete Mathematics.
  - Guided students in applying mathematical reasoning to computational and algorithmic problems.
- **Mathematics Teacher**, Various Colleges 2009–2024
  - Taught advanced mathematics with focus on abstraction, rigor, and analytical problem-solving.

Publications

- A. Safary, **H. Shafieasl**, J. Mitani. "Parameterized Folded State Shape Modeling of David Huffman's Ellipse." *Journal for Geometry and Graphics*, 28(2):199–212, 2025. Link
- A. Safary, **H. Shafieasl**, J. Mitani. "Geometric Design Tool for One-Fold, a Curved Origami with a Single Fold." *Journal for Geometry and Graphics*, 28(1):089–101, 2024. Link
- H. Pourmahmood-Aghababa, M.H. Sattari, **H. Shafieasl**. "Bounded Pseudo-Amenability and Contractibility of Certain Banach Algebras." *Filomat*, 34(5):1701–1712, 2020. Link
- **H. Shafieasl**. "A Note on Ramified Coverings of Riemann Surfaces." *International Mathematical Forum*, 15(8):377–381, 2020. Link
- **H. Shafieasl**, M.H. Sattari. "Symmetric Module and Connes Amenability." *Sahand Communications in Mathematical Analysis*, 5(1):49–59, 2017. Link
- M.H. Sattari, **H. Shafieasl**. "Product of Derivations on Triangular Banach Algebras." *Journal of Hyperstructures*, 6(1), 2017. Link

Awards & Honors

- Ranked 1st in cumulative GPA (B.Sc. and M.Sc. in Mathematics).

Research Interests

- High-Dimensional Data and Large-Scale Computation
- Machine Learning and Reinforcement Learning
- Computational Geometry and Shape Analysis
- Graph Algorithms and Spectral Methods
- Mathematical Foundations of Machine Learning