Hiroshani Senarathna

San Marcos, TX 78666

Email: qzm19@txstate.edu

SUMMARY

I have been teaching mathematics and statistics for ten years. I have experience conducting research and teaching in the following areas:

- Pure and Applied Mathematics
- Statistics
- Topology
- Knot Theory

EDUCATION

Ph.D. in Mathematics August 2016 – August 2023
Southern Illinois University, Carbondale, Illinois

- Major fields: Topology, Geometry
- Minor field: Statistics
- Thesis title: Classifying Knots and Links in L (1, -1) Template

M.Sc. in Mathematics January 2014 - August 2016
Southern Illinois University, Carbondale, Illinois

- Major fields: Topology, Geometry
- Thesis title: Knots and Knot Groups

B.Sc. (Hons) Special Degree in Mathematics March 2007 - September 2011
University of Peradeniya, Peradeniya, Sri Lanka

- Major Subjects: Pure Mathematics, Applied Mathematics
- Minor Subjects: Chemistry, Computer Science

PROGRAMMING SKILLS

Python, R, Excel, Minitab, MATLAB

TEACHING EXPERIENCE

Lecturer in Mathematics August 16, 2024 – Present

- Math 1329 – Math for Business & Econ II
- Math 1316 – Survey of Contemporary Math

As a Graduate Teaching Assistant at Southern Illinois University January 2014 – May 2021

- Math 282 - Introduction to Statistics (Organization and display of data, measures of location and dispersion, elementary probability, statistical estimation, parametric and non-parametric tests of hypotheses)
- Math 282 – Introduction to Statistics (Online)
- Math 140 - Short Course in Calculus (Techniques of differentiation, max-min problems in business and social science, partial derivatives, Lagrange multipliers, elementary integration techniques)
- Math 139 – Finite Mathematics (Set concepts and operations, combinations, permutations, elementary probability theory including Bayes formula, linear system of equations, matrix algebra, row reduction, introduction to linear programming and simplex method)
- Math 125 – Technical Mathematics with Applications **(**Emphasizes the applications of algebra, geometry, and trigonometry in technical fields. Topics in algebra include unit conversion, functions and graphs, systems of linear equations, quadratic equations, higher degree equations, and variation. Topics in geometry include Pythagorean Theorem and area and volume calculations. Topics in trigonometry include the trigonometric functions, laws of sines and cosines, radian angle measurement, and some vector operations)
- Math 108 - College Algebra (The algebra of polynomials, rational, graphing, exponential and logarithmic functions, conic sections, solving equations including systems)
- Math 108 - College Algebra (Online class)
- Math 101 - Contemporary Mathematics (Flipped class) (Elementary mathematical principles as they relate to a variety of applications in contemporary society. Exponential growth, probability)

As a Lecturer at University of Peradeniya, Sri Lanka November 2011 – November 2013

- MT 307 - Complex Analysis I (The complex field, Riemann sphere, Topology of the complex plane, Analytic functions, Cauchy- Riemann equations, Elementary functions, Cauchy ‘s Theorem (Proof based on Green's theorem), Cauchy ‘s integral formulae, Taylor series, Laurent series, Classification of singularities, Residue Theorem, Evaluation of real-valued integrals by means of residues, Conformal mappings)

- MT 312 – Numerical Analysis II (Initial-value Problems For Ordinary Differential Equations (Euler‘s method, Higher order Taylor methods, Runge-Kutta method) , Direct Methods for Solving Linear Systems (Linear systems of equations, Gaussian elimination and backward substitution), Numerical Solutions of Non-Linear Systems of Equations (Fixed points for functions of several variables, Newton‘s method, Quasi-Newton methods, Steepest descent techniques), Boundary-Value Problems for Ordinary Differential Equations (The linear shooting method, The shooting method for non-linear problems, Finite-difference methods for linear problems, Finite-difference methods for non-linear problem))

Online Teaching Experience

- Experience with online teaching resources and technologies to create and produce lecture videos and other course materials.

- Teaching experience in hybrid, and blended (both synchronously and asynchronously online).

PROFESSIONAL SERVICES

Southern Illinois University Carbondale

2015 Aug – 2016 Aug	Committee member of the Sri Lankan Student Association.
2014, 2015	Volunteered at the science fair for college and high school students.
2014, 2015	Volunteered for the high school students ‘Expanding Horizon Program’.
2017 – 2021	Member of the American Mathematical Society student chapter.
2019 – Present	Member of the SIUC Alumni Association.

University of Peradeniya, Sri Lanka

July 2013- November 2013 Academic Sub–Warden, Wijewardena Hall

EXTRA-CURRICULAR ACTIVITIES

- Member of the Dancing team, University of Peradeniya, Sri Lanka.
- Has passed the Certificate Test in English, English Language Teaching Unit, Faculty of Science, University of Peradeniya.
- Completed the St. John Ambulance Association certificate program "First Aid to the Injured."

REFERENCES

1. MICHAEL SULLIVAN, Ph.D.
   Professor, Mathematics
   College of Engineering, Computing, Technology, and Mathematics
   Neckers 385
   Southern Illinois University Carbondale
   1245 Lincoln Dr, Carbondale IL 62901
   Phone: **(618) 453 6592**
   Email: **prof.michael.sullivan@gmail.com**

2. DAVID OLIVE, Ph.D.
   Professor, Mathematics
   College of Engineering, Computing, Technology, and Mathematics
   Neckers 261
   Southern Illinois University Carbondale
   1245 Lincoln Dr, Carbondale IL 62901
   Phone number: **(618) 453 6566**
   Email: **dolive@siu.edu**

3. Jianhong Xu, Ph.D.
   Professor, Mathematics
   College of Engineering, Computing, Technology, and Mathematics
   Neckers 387
   Southern Illinois University Carbondale
   1245 Lincoln Dr, Carbondale IL 62901
   office phone number: **(618) 453 6561**
   Email: **jhxu@siu.edu**