

NIRJAL SHRESTHA
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Education:

- **Bachelor of Science in Computer Science & Bachelor of Arts in Mathematics**
- **Associate of Arts and Science in Information Technology**
Cameron University, Lawton, Oklahoma, GPA – 3.976, May 2018
- **Doctor of Philosophy in Mathematics**
University of Florida, Gainesville, Florida, GPA – 3.86, May 2023(Expected)

Experience and Certification:

- Robotics Instructor, CETES Department, Cameron University. (Jan 2016 - Mar 2016)
- Research Assistant, Mathematical Science, Cameron University. (Aug 2016 – May 2018)
- Teaching Assistant, Department of Mathematics, University of Florida. (Aug 2018 - Present)
Courses Taught: MAC 1105, MAC 1147, MAC 2311, MAC 2312, MAC 2313
- Certification: ICCP Certified Computer Scientist, Testout Security and Network Pro

Relevant Projects:

1. Electronic Medical Record Database Developer.
 - Worked as a lead of a Database team and collaborated with programming and multimedia team to develop a relational database.
 - Developed a Process Library Database like database repository where users can view, upload, and update the file based on user privileges.
2. Middleware Development Lead.
 - Collaborated with in house developers to create a sustainable application for providing better tracking and analytics of project evaluation with backbone C#
 - Coordinated with database team to design optimized queries and procedures for retrieving data from SQL database.
3. Analyzing the equation of gas dynamics as a hyperbolic system of conservation law using Fenics.
 - Wrote the variational form of the hyperbolic system and analyze the boundary and compatibility condition.
 - Discussed both the implicit and explicit Euler time discretization schemes.
4. Using Topological Data Analysis (TDA) to interpret the data from harvesting in R.
 - Imported the data from excel to R and converted it to point cloud.
 - Created Simlicial Complex and Persistence Landscape.
 - Computed Principal Component Analysis(PCA) and plotted the Support Vector Machine.
5. Deep Learning as an Optimal Control.
 - Currently working on the derivation of backpropagation of ANN and CNN using Lagrange Multiplier.
6. Extending the Local Convergence Analysis of Newton's Method.
 - Published a paper describing the computation of radii of convergence of the two step Newton method and two step Midpoint method.
 - Found the error bounds on the distances involved using Lipschitz constants.

Skills and Relevant Courses:

- **Programing Skills:** C++, PHP, CSS, HTML, Swift, SQL, Javascript, Python, R, MATLAB, Mathematica, LaTeX
- **Databases:** MySQL, SQL Server, MS-Access.
- **Software:** Visual Studio, MS Office, Visual Basic, Wireshark, System Architect.
- **Operating System:** Windows, Linux, MAC OS.