

# Nitesh Mathur

## Contact Information

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## SUMMARY

PhD candidate in mathematics with three publications in PDEs and graduate coursework in numerical analysis. Programming for 7+ years, proficient in Mathematica, MATLAB, LaTeX, Python, R, and strong background in machine learning and deep learning. Seeking position as a research scientist.

## EDUCATION

- **Ph.D. Mathematics** Aug 2019-May 2023  
*University of Iowa, Iowa City, IA*  
Advisor: [Dr. Tong Li](#), GPA: 3.88  
Thesis: Study on Systems of Nonlinear Conservation Laws Arising in Chemotaxis and Traffic Flow
- **M.S. Mathematics** May 2018-May 2019  
*The University of Tulsa, Tulsa, OK*  
Advisor: [Dr. Kevin O'Neil](#), GPA: 4.00  
Master's Report: [An Algorithm to Reverse The Generalized Factorials Process](#)
- **B.S. Mathematics, Magna Cum Laude** Aug 2015-May 2018  
*The University of Tulsa, Tulsa, OK*  
Minors: Computer Science, Music, GPA: 3.967  
Presidential Scholar, Honors Scholar, TURC Research Scholar

## CERTIFICATES

- **Deep Learning Specialization** June 2021-Dec 2021  
*Andrew Ng, Coursera*  
- Convolution Neural Networks, Deep Learning, Sequence Models, Structuring Machine Learning Projects, Hyperparameter Tuning and Regularization
- **Developing Serverless Solutions on AWS** June 2022  
*AWS Training and Certifications*
- **Graduate Certificate in College Teaching** Jan 2022-May 2023  
*University of Iowa, Iowa City, IA*

## PUBLICATIONS

1. Tong Li and Nitesh Mathur, Global well-posedness and asymptotic behavior of  $BV$  solutions to a system of balance laws arising in traffic flow. [Networks and Heterogeneous Media](#). 18 (2) (2023), 581-600.
2. Tong Li and Nitesh Mathur, Riemann Problem For a Non-Strictly Hyperbolic System in Chemotaxis, [Discrete and Continuous Dynamical Systems Series B](#), 27 (2022), 2173-2187.
3. Tong Li and Nitesh Mathur, Global  $BV$  solutions to a system of balance laws from traffic flow, accepted for publication on *The Proceedings of HYP2022, XVIII International Conference on Hyperbolic Problems: Theory, Numerics, Applications*, 2023.

## RELEVANT COURSES

Graduate courses in Numerical Analysis, Numerical Optimization, Partial Differential Equations (PDEs), Dynamical Systems, Bioinformatics, Statistical Learning, Probability, Stochastic Modeling, and Quantum Computing.

## WORK EXPERIENCE

- **Principal Financial Group**, Des Moines, IA May-July 2022  
*Data Engineering Intern*
  - Extracted data via Github and Azure APIs and implemented data pipeline to calculate DORA (DevOps Research and Assessment)
  - Produced dashboard in AWS QuickSight and implemented project in AWS CDK with Python
  - Built website using React and Node.js for Personalized Onboarding in IT Code Jam hackathon
- **Bank of Oklahoma Financial (BOKF)**, Tulsa, OK May 2018-May 2019  
*IT Intern, Service Management and Automation Team Accelerated Career Track (ACT)*
  - Assisted in developing and deploying a company-wide release of ServiceNow
  - Implemented recommendation dashboard to streamline bank's prospecting
- **Bank of Oklahoma Financial (BOKF)**, Tulsa, OK May-Aug 2017  
*IT Intern, Bank Data Warehouse and Salesforce Team Accelerated Career Track (ACT)*
  - Eliminated technical debt by improving regression testing from 72% to 95%
  - Wrote a 30-page white paper and presented research to bank executives

## SOFTWARE SKILLS

- **ML Frameworks and NLP:** Tensorflow, Transformers, Keras, scikit-learn
- **Data:** Python, R, SQL, Java, Jupyter Notebook, NumPy, Pandas
- **Visualization:** PowerBI, Tableau, Visualization Toolkit (VTK), Matplotlib
- **AWS:** Lambda, StepFunctions, S3, Glue, DynamoDB, QuickSight, Amplify
- **Version Control:** Github, GitKraken, CI/CD (Azure Pipelines)
- **IT:** ServiceNow, Apex/Salesforce, SCRUM/Agile, configuration management
- **Web Development:** HTML, CSS, React, Node.js
- **Math Programming:** LaTeX, Mathematica, MATLAB, XPP

## HONORS & AWARDS

- Graduate College Post-Comprehensive Research Fellowship Fall 2022
- Kleinfeld Award for Student Research Publications Apr 2021, Feb 2023
- Veatch Award for Outstanding Achievement in Mathematics May 2018

## ACTIVITIES & LEADERSHIP

- Webmaster, *Math Graduate Board (MGB)* Jan-Dec 2022
- GAUSS Seminar Organizer Jan-Dec 2021
- Vice President, *Mathematical Association of America (MAA) Chapter, University of Tulsa* Aug 2016-May 2019
- Co-Founder & President *Circle K International Chapter, University of Tulsa* Aug 2015-May 2017
- Violinist 2008-present

## PROFESSIONAL AFFILIATIONS

- Society of Industrial and Applied Mathematics (SIAM) 2022-present
- Phi Kappa Phi 2018-2020
- Kiwanis Club of Tulsa 2014-2019

## LINKS

- [Portfolio Website](#)
- [LinkedIn](#)
- [Github](#)