

Samiha Chowdhury Rouf

PhD Candidate | Teaching Assistant | Research Assistant

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EDUCATION

University of Texas Dallas

Ph.D Candidate, Applied Mathematics (expected May 2021)

- Advisor: Dmitrii Rachinskii
- Research: Dynamical Systems, Epidemiological Models

MAT in Mathematics Education, Aug 2016

BS in Applied Mathematics, May 2014

TEACHING EXPERIENCE

Department of Mathematics, UTD

Teaching Assistant, 2017-present

- Teach two weekly review sessions per semester
- Courses Taught: Differential Calculus (2017-2018), Integral Calculus (2019), Linear Algebra (2020-)

Dallas College (Richland Campus)

Mathematics Tutor, 2015

- Assisted students at the learning lab with coursework, and exam reviews by answering questions regarding their misconceptions on various mathematics concepts related to their course.

PROJECTS

Dynamics of SIR Model with Heterogeneous Response

- Faculty Mentor: Dmitrii Rachinskii
- Goal: Develop research paper that discusses the implications of uniformity in public response to disease spread via numerical models

Time-resolved Cone Beam CT Reconstruction

- Funded by NSF Enriched Doctoral Training Program
- Faculty Mentors: Yan Cao, Yifei Lou
- End-product: Machine learning algorithm for 4D CBCT image reconstruction

PUBLICATIONS

1. Jana Kopfová, Petra Nábêlková, Dmitrii Rachinskii, **Samiha Rouf**. *Dynamics of SIR model with vaccination and heterogeneous behavioral response of individuals modeled by the Preisach operator*. Under review for Journal of Mathematical Biology.
2. Zuzana Chladná, Jana Kopfová, Dmitrii Rachinskii, **Samiha Rouf**. *Global dynamics of SIR model with switched transmission rate*. Journal of Mathematical Biology. 80, 1209–1233. Jan 2020.
3. **Samiha Rouf**, Chenyang Shen, Yan Cao, Conner Davis, Xun Jia, and Yifei Lou. *A Neural Network Approach for Image Reconstruction from a Single X-ray Projection*. Medical Image Understanding and Analysis. MIUA 2019. Vol 1065, 208-219.

PRESENTATIONS & TALKS	<ol style="list-style-type: none"> 1. Global dynamics of SIR model with switched transmission rate. <i>Contributed talk at Texas Women in Math Symposium</i>. TAMU, College Station, TX. Feb 1, 2020. 2. Global dynamics of SIR model with switched transmission rate. <i>Poster at SIAM TX-LA 2nd Meeting</i>. SMU, Dallas, TX. Nov 2, 2019. 3. A Neural Network Approach for Image Reconstruction from a Single X-ray Projection. <i>Contributed talk at SIAM Annual Meeting</i>. Pittsburg, PN. July 14, 2017.
REFERENCES	<ol style="list-style-type: none"> 1. Dmitrii Rachinskii Professor University of Texas Dallas, USA Department of Mathematics 2. Jana Kopfová Associate Professor Silesian University in Opava , Czech Republic Mathematical Institute 3. Yifei Lou Associate Professor University of Texas Dallas, USA Department of Mathematics 4. Yan Cao Associate Professor University of Texas Dallas, USA Department of Mathematics 5. Rabin Dahal Senior Lecturer I University of Texas Dallas, USA Department of Mathematics