## Dr. Junyi Tu


CONTACT INFORMATION

Department of Computer Science and Engineering
University of South Florida
Tampa, FL 33620
*Tel:* 813-363-0373
*E-mail:* junyi@mail.usf.edu


RESEARCH INTERESTS

Topological Data Analysis, Image Processing, Data Visualization, Scientific Computing, Dynamical Systems and Differential Equations

EDUCATION

**University of South Florida**, Tampa, FL, USA

M.S. Computer Science and Engineering, May 2018
Advisor: Prof. Paul Rosen

Ph.D. Applied Mathematics, August 2016

- Dissertation Topic: "Attractors and random attractor of reaction diffusion systems with noise"
- Advisor: Prof. Yuncheng You

**University of Science and Technology of China**, Hefei, Anhui, P.R.China

M.S. Applied Mathematics, June 2010

- Thesis Topic: "Explicit Flow Equations and Recursion Operator in non-commutative integrable systems"
- Advisor: Prof. Jingsong He

**Harbin Institute of Technology at Weihai**, Weihai, Shangdong, P.R.China

B.S. Applied Mathematics, June 2007

HONORS AND AWARDS

Tharp Scholarship: 2011–2015
Travel Funding: 2010–2015
USF Math.& Stat. Department Graduate Fellowship: 2010

PUBLICATIONS

Paul Rosen, Mustafa Hajij, Junyi Tu, Tanvirul Arafin and Les Piegl, Inferring Quality in Point Cloud-based 3D Printed Objects using Topological Data Analysis, Computer-Aided Design & Applications, 16(3), 2019,519-527

Paul Rosen, Junyi Tu, Les A. Piegl, A hybrid solution to parallel calculation of augmented join trees of scalar fields in any dimension, Computer-Aided Design and Applications, vol 0, 1-9, 2018, Taylor & Francis, doi 10.1080/16864360.2017.1419648

P Rosen, J Tu, L Piegl, A Hybrid Solution to Calculating Augmented Join Trees of 2D Scalar Fields in Parallel, CAD Conference and Exhibition 2017 Japan, pp 32-36.

Junyi Tu, Yuncheng You, Random attractor of stochastic Brusselator system with multiplicative noise, Discrete Continuous Dynamical Systems-A, Volume 36, Number 5, May 2016, Pages 2757-2779.

Hongyan Li, Junyi Tu, Random attractors for stochastic lattice reversible Gray-Scott systems with additive noise, Electronic J. Diff. Eqs., Vol. 2015 (2015), No. 263, pp. 1-25.

Hongyan Li, Yuncheng You, Junyi Tu, Random attractors and averaging for non-autonomous stochastic wave equations with nonlinear damping, Journal of Differential Equations, Volume 258, Issue 1, January 2015, Pages 148-190.

Junyi Tu, Global Attractors and Robustness of the Boissonade System, J. Dyn. Diff. Eq., Volume 27, Issue 1, March 2015, Pages 187-211.

Yaning Tang, Junyi Tu, Wen-Xiu Ma, Two New Wronskian Solutions for (3+1)-Dimensional Jimbo-Miwa Equation, Appl. Math. and Comp. Volume 218, Issue 20, June 2012, (10050-10055)

Wen-Xiu Ma, Yi Zhang, Yaning Tang, Junyi Tu, Hirota bilinear equations with linear superposition principle of exponential waves, Appl. Math. and Comp., Volume 218, Issue 13, March 2012, (7174-7183)

Jingsong He, Junyi Tu, Xiaodong Li, Lihong Wang, Explicit Flow Equations and Recursion Operator of the ncKP hierarchy, Nonlinearity, Volume 24 Number 10 October 2011

## Conferences and talks

Theory and Foundations of TGDA, TRIPODS Workshop, May 21-25, 2018, OSU

TGDA @ OSU TRIPODS Summer School, May 14-18, 2018, OSU

Analysis of Partial Differential Equations using Dynamical Systems Techniques: A conference in honor of the 60th birthday of C. Eugene Wayne, June 1-3, 2016, Boston University, USA

Analysis and Beyond: Celebrating Jean Bourgains Work and Impact, May 21-24, 2016, Institute for Advanced Study, Princeton University, USA

2015 International Summer School at Harbin Institute of Technology, July 10-22, HIT, Harbin, China

Mathematical Finance and Probability Seminars at Rutgers, invited talk, "Random Attractor of Stochastic Reaction diffusion System", March 3, 2015, Rutgers University at New Brunswick, New Jersey, USA

48th Spring Topology and Dynamics Conference, March 13-15, 2014, University of Richmond, VA, USA.

First International Conference on Dynamics of Differential Equations, March 16-20, 2013, Georgia Tech, Atlanta, GA USA

Noncommutative Algebraic Geometry Summer School of MSRI, June 17-30,2012, UC Berkeley, USA

Symmetries of Differential Equations: Frames, Invariants and Applications, May 17-20, 2012, Minnesota University, USA

Joint Mathematics Meetings of AMS, Jan 4-7, 2012, Boston, USA

SIAM Conference on Applications of Dynamical Systems, May 22-26, 2011, Snowbird, Utah, USA

7th International Conference on Differential Equations and Dynamical Systems, "Explicit Flow Equations and Recursion Operator of the ncKP hierarchy", December 15-18, 2010, Tampa, Florida, USA

| | |
|---|---|
| Skills and Programming Languages | Java, C/C++, Python, TensorFlow, Matlab, Cuda, OpenCL, PostgreSQL, Processing, Weka, Scala, Shell Script, Linux, OSX, Git |
| Contributed Projects | Feature Extraction & Visualization of ALMA Data Cubes through Topological Data Analysis<br><br>http://www.cspaul.com/wordpress/alma-tda/ |

Professional References

1. Paul Rosen, Assistant Professor
   ENB 311, Department of Computer Science and Engineering, University of South Florida
   Phone: 813-974-2282
   Email: prosen@usf.edu
2. Yuncheng You, Professor
   CMC 359, Department of Mathematics and Statistics, University of South Florida
   Phone: 813-974-9741
   Email: you@mail.usf.edu
3. Xiang-dong Hou, Professor and Director of the Mathematics Graduate Program
   CMC 355, Department of Mathematics and Statistics, University of South Florida
   Phone: 813-974-2561
   Email: xhou@usf.edu
4. Dmytro Savchuk , Associate Professor
   CMC 310, Department of Mathematics and Statistics, University of South Florida
   Phone: 813-974-4989
   Email: savchuk@usf.edu