Curriculum Vita of Weidong Chen

Dep of Math, 460 McBryde Hall, Virginia Tech   Office Phone: (540) 231-4579
225 Stanger Street, Blacksburg, VA 24061-1026   Email: weidongc@vt.edu

---

RESEARCH INTERESTS
Numerical Analysis, Inverse and Ill-posed Problems, and Regularization Methods in Computational Mathematics and Signal Processing.

EDUCATION
Ph.D, Mathematics, Kansas State University, 12/2007.
M.S., Software Engineering, Kansas State University, Manhattan, KS, 02/2000.
M.S., Applied Mathematics, Hebei University of Technology, Hebei, China, 08/1989.
B.S., Mathematics, Jiangsu Educational College, Nanjing, China, 07/1986.

TEACHING EXPERIENCE
- 08/2021 – present, Instructor, Department of Mathematics, Virginia Tech.
  - Teach Calculus I by FlexSync Teaching.
- 08/2017 – 05/2021, Instructor, Dept of Math and Stat, Minnesota State University, Mankato.
  - Teach Calculus I, III, Ordinary Differential Equations by FlexSync Teaching.
  - Taught Calculus I, II, III, Statistics, Real Analysis, Ordinary Differential Equations and Computations of Numerical Algebra.
- 08/2015 – 05/2016, Instructor, Math Dept., Park University.
  - Taught Intermediate Algebra and College Algebra.
- 08/2012 – 05/2015, Postdoctoral Associate, Math Dept., University of Georgia.
  - Taught Calculus with analytics, Calculus I, III, Analysis and Differential Equations.
- 08/2011 – 06/2012, Lecturer, Math Dept., Georgia State University.
  - Taught College Algebra by Mathlab, Introduction to Math Model and Survey Of Calculus.
- 08/2010 – 08/2011, Instructor, Math Dept., Missouri Western State University.
  - Taught Business Calculus, College Algebra, Pre-Algebra by Aleks.
- 01/2008 – 08/2009, Lecturer, Math Dept., University of Texas-Pan American.
  - Taught Business Calculus, Contemporary Mathematics and Intermediate Algebra.
  - Assisted in the seminar "Partial Differential Equations" for graduate students.
  - Conducted students in DoD Micro-local Analysis and Radar Imaging research program.
- 01/2002 – 12/2007, Teaching-Assistant, Kansas State University
  - Taught College Algebra, Calculus II, III, Matrix Theory (using Matlab).
  - Assisted in teaching the graduate course "Numerical Solutions of PDE".

PUBLICATIONS
[1] *A regularization method for numerical inversion of the Laplace transform.* SIAM J. on Numerical Analysis, June 1993. (Math review: **94e:65141** 65R10 44A10)
[2] *A new extrapolation algorithm for band-limited signals using regularization method.* IEEE Transactions on Signal Processing, March 1993.
[3] *Application of regularization to nonlinear analysis.* The Journal of Beijing Armor Engineering Institute, 1994.
[4] *Numerical Method for Solving Obstacle Scattering Problems by an Algorithm Based on the MRC.* Int. J. Applied Math Sci., Vol.2, no.1, 2005, joint work with A. Ramm.
[5] *An Efficient Method for An Ill-posed Problem---Band-limited Extrapolation by Regularization,* IEEE Transactions on Signal Processing, volume 54, issue 12, 2006.
[6] *A Fast Convergence Algorithm for Band-limited Extrapolation by Sampling,* IEEE Transactions on Signal Processing, volume 57, no. 1, 2009.
[7] *Some Aspects of Band-limited Extrapolations.* IEEE Transactions on Signal Processing, Vol. 58, no. 5, 2010.
[8] *The Ill-posedness of The Sampling Problem and Regularized Sampling Algorithm,* Journal of Digital Signal Processing, ELSEVIER, March 2011.
[9] *The Ill-posedness of Restoring Lost Samples and Regularized Restoration for Band-limited*

    Signals, Journal of Signal Processing, ELSEVIER, May 2011.

[10] *Computation of Fourier Transform for Noisy Band-limited Signals,* SIAM J. on Numerical
    Analysis, Vol. 49, No. 1, 2011.

[11] *Band-Limited Extrapolation by Regularization,* LAP Lambert Academic Publishing, 2010.

[12] *Regularized Restoration for Two Dimensional Band-limited Signals,* Multidimensional
    Systems and Signal Processing, Springer, Dec., 2013.

[13] *The Regularized Low Pass Filter,* J. of Signal and Information Processing, vol. 5 no. 1, 2014.

[14] *Computation Of Two-Dimensional Fourier Transforms For Noisy Band-Limited Signals,*
    Applied Mathematics and Computation, ELSEVIER, 246, 199–209, 2014.

[15] *The Regularized Sampling Algorithm in reconstructing non-bandlimited functions,* Journal of
    Computational and Applied Mathematics, ELSEVIER, Vol. 301, Aug. 2016, pp. 259–270.

[16] Chapter contributor, Digital Signal Processing (DSP): Fundamentals, Techniques and
    Applications, ISBN: 978-1-63485-168-8, Nova Science Publishers, Inc., 2016.

[17] *Applications of the Regularization method,* LAP Lambert Academic Publishing, 2016.

[18] *A Regularized Two-Dimensional Sampling Algorithm,* Journal of Inverse and Ill-posed
    Problems, June, 2017.

[19] Chapter contributor, Recent Advances in Integral Equations, IntechOpen, 2019.

[20] *The Ill-posedness of Derivative Interpolation and Regularized Derivative Interpolation,*
    EURASIP Journal on Advances in Signal Processing, Springer, July, 2020.

[21] *Regularized Derivative Interpolation for Two Dimensional Band-limited Function,* Journal of
    Signal Processing, ELSEVIER, July, 2021.

CONFERENCE TALKS

- Gave presentation in the Data Science Meeting at Washington State University in 2020.
- Gave presentations at Shandong University of Technology in 2019.
- Chaired the Imaging and Inverse Problems session at AMS Joint Mathematics Meeting in 2018.
- Gave presentations at AMS Joint Mathematics Meeting in 2006, 2014, 2018 and 2019.
- Gave presentations at Fudan University and DongHua University in 2016.
- Gave presentations at 5 -15th Prairie Analysis Seminar at Kansas State University and University of Kansas, 2005-2019 and Graduate Student Council at KSU on Mar. 2, 2007.

REVIEWER OF JOURNALS

- IEEE Transactions on Signal Processing
- IEEE Transactions on Image Processing
- IEEE Transactions on Information Theory
- IEEE Access, IEEE Letters on Signal Processing
- ELSEVIER Journal of Computational and Applied Mathematics.
- ELSEVIER Journal of Signal Processing, ELSEVIER Journal of Digital Signal Processing
- Numerical Functional Analysis and Optimization
- Circuits, Systems, and Signal Processing
- Electronics Letters

AWARDS

- Funding of young scientists in Beijing Armor Engineering Institute.
- Papers [1] and [2] were awarded the prizes in the Contest of Beijing Young Scientists
- Paper [3] was awarded a prize in Beijing Armor Engineering Institute
- Prize of excellence for providing exceptional customer satisfaction and innovation at Sprint in November, 2000
- Prize in the lecturing competition in Beijing Armor Engineering Institute
- First place in math competition in Yancheng Teacher's Academy
- First place in math competition in High School

OTHER TRAINING

- 07/2002 – 08/2002 MSRI Summer Graduate Program.
- 12/1978 – 01/1981 Diploma, Mathematics, Yancheng Teachers' Academy, Yancheng, China.
- 02/2000 -- 04/2000 Diplomas, training in University Of Excellence for JAVA, C++, Oracle, PL/SQL, Embedded SQL, UNIX, Network, Object Oriented Model and Production Exercise.