CURRICULUM VITAE for Xue-Cheng Tai

1 Educational and Professional Experiences

- Ph.D degree, April, 1991, Mathematics Department, University of Jyvaskyla, Finland. Examination in applied mathematics. Grade: excellent.

- (1994–1997): Associate Professor, Department of Mathematics, University of Bergen.

- (2003–2012, adjunct): Professor, Center of Mathematics for Applications (CMA, Norwegian Center of excellence), University of Oslo.

- (2003– 2012, adjunct): Professor, Center of Integrated Petroleum Research (CIPR, Norwegian Center of excellence), University of Bergen.

- (2007–2011, adjunct): Associate Professor, Division of Mathematical Sciences, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore.

- (Jan. 1997– Aug. 2021): Professor, Department of Mathematics, University of Bergen. On leave from March 2017 to August 2021.

- (Apr. 2017 – Aug. 2020): Professor, Department of Mathematics, Hong Kong Baptist University.

- (Sep. 2020 – Aug. 2022): Chair Professor, Department of Mathematics, Hong Kong Baptist University.

- (Feb. 2020 – Mar. 2022): Head of Department of Mathematics, Hong Kong Baptist University.

- (Sep. 2019 – Aug. 2022): Associate Director for Institute for Computational and Theoretical studies, Hong Kong Baptist University.

- (Sep. 2019 – Apr. 2022): Director for Center for Mathematical Imaging and Vision, Hong Kong Baptist University.

- (Sep. 2022 – May 31): Chief Research Scientist and Executive Program Director, Hong Kong Center for Cerebro-cardiovascular Health Engineering (COCHE), Hong Kong Science Park.

- (Jun. 2023 – now): Chief Scientist, Norwegian Research Center (NORCE), Nygårdsgaten 112, 5008 Bergen, Norway.

2 Research Areas

Data analytics, Image processing, numerical analysis, computational mathematics, inverse problems, optimization, See https://www.norceresearch.no/personer/xue-cheng-tai for more details.

3 Awards and professional services

- 1993, Germany Humboldt Scholarship, The Germany Government.

- Prize winner for the 8th "Feng-Kang prize for scientific computing 2009", see http://lsec.cc.ac.cn/fengkangprize/contest.html.

- Nanyang Award for Research Excellence (2011, Nanyang Technological University, Singapore).

- World top 2% Scientists by Stanford University: 2017 (world rank 72792), 2018 (world rank 87402), 2019 (world rank 102867), 2020.

- Top Scientists with ranking for Computer Science & Electronics by Stanford University: 2019, 2020.

- Top Mathematics Scientists by Research.com, 2021 (world rank 939).

- Top 100 Researchers in University of Bergen, 2015, see https://pahoyden.khrono.no/publisering-2014/de-100-mest-produktive-forskerne/358637.

- Editor for:
  - SIAM Journal on Numerical Analysis, (2024-now)
  - SIAM Journal on Imaging Science, (2018-now),
    see https://epubs.siam.org/journal/siims/editorial-board.
  - Editor in Chief, Advances in Continuous and Discrete Models: Theory and Applications, see https://advancesindifferenceequations.springeropen.com/about/editorial-board-acdm (June 2021 – now).
  - Journal of Mathematical Imaging and Vision (JMIV) (2017-now),
    see http://www.springer.com/computer/image+processing/journal/10851/PSE.
  - Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, See https://www.tandfonline.com/toc/tciv20/current (1997 – now).
  - The East Asia Journal on Applied Mathematics (EAJAM) (2010 - now)
    see http://www.global-sci.org/eajam/.
  - Inverse Problems and Imaging (2008 - now),
    see http://aimsciences.org/journals/ipi/index.htm.
  - International Journal of Numerical analysis and modeling (2004 - now).
    See http://www.math.ualberta.ca/ijnam/.
  - Executive editor for Numerical Mathematics: Theory, Methods and Applications (NM-TMA) (2005 - 2021), see http://www.global-sci.org/nmtma/.

4 Publications–Recent

[1] Huibin Chang, Roland Glowinski, Stefano Marchesini, Xue-Cheng Tai, Yang Wang, and Tieyong Zeng. Overlapping domain decomposition methods for ptychographic imaging. *SIAM Journal on Scientific Computing*, 43(3):B570–B597, 2021.

[2] Hao Liu, Xue-Cheng Tai, Ron Kimmel, and Roland Glowinski. A color elastica model for vector-valued image regularization. *SIAM Journal on Imaging Sciences*, 14(2):717–748, 2021.

[3] Liang-Jian Deng, Roland Glowinski, and Xue-Cheng Tai. A new operator splitting method for the euler elastica model for image smoothing. *SIAM Journal on Imaging Sciences*, 12(2):1190–1230, 2019.

[4] Ke Yin and Xue-Cheng Tai. An effective region force for some variational models for learning and clustering. *Journal of Scientific Computing*, 74(1):175–196, 2018.

[5] Zachary M Boyd, Egil Bae, Xue-Cheng Tai, and Andrea L Bertozzi. Simplified energy landscape for modularity using total variation. *SIAM Journal on Applied Mathematics*, 78(5):2439–2464, 2018.

5 Publications–Others

[1] Xue-Cheng Tai, Jooyoung Hahn, and Ginmo Jason Chung. A fast algorithm for Euler's elastica model using augmented lagrangian method. *SIAM Journal on Imaging Sciences*, 4(1):313–344, 2011.

[2] Egil Bae, Jing Yuan, and Xue-Cheng Tai. Global minimization for continuous multiphase partitioning problems using a dual approach. *International journal of computer vision*, 92(1):112–129, 2011.

[3] Chunlin Wu and Xue-Cheng Tai. Augmented Lagrangian method, dual methods, and split Bregman iteration for ROF, vectorial TV, and high order models. *SIAM Journal on Imaging Sciences*, 3(3):300–339, 2010.

[4] Johan Lie, Marius Lysaker, and Xue-Cheng Tai. A binary level set model and some applications to Mumford-Shah image segmentation. *Image Processing, IEEE Transactions on*, 15(5):1171–1181, 2006.

[5] Marius Lysaker, Arvid Lundervold, and Xue-Cheng Tai. Noise removal using fourth-order partial differential equation with applications to medical magnetic resonance images in space and time. *Image Processing, IEEE Transactions on*, 12(12):1579–1590, 2003.