

# Thomas Mejstrik

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## Education

- April 2019 – **Parental leave.**  
October 2019
- March 2016 – **PhD in Mathematics**, with *M. Charina*, *University of Vienna*, Austria, graduated with distinction.  
April 2019
- March 2013 – **Master in Music education – Voice and Instruments – Piano**, with *M. L. Winter*,  
June 2016 *University of Music and performing arts Vienna*, Austria, graduated with distinction.
- October 2013 – **Piano Concert Studies**, with *You Xi (由熹)*, *Central Conservatory of Music (中央音乐学院)*, *Beijing*, China, fellow of the Chinese embassy in Austria.  
– June 2014
- October 2008 – **Bachelor in Music education – Voice and Instruments – Piano**, with *J. Marian*,  
– March 2013 *University of Music and performing arts Vienna*, Austria, graduated with distinction.  
2008 – 2014 **Chinese studies**, *University of Vienna*, Austria, not finished.
- October 2007 – **Chinese studies**, *Central China Normal University (华中师范大学)*, *Wuhan*, China,  
– June 2008 fellow of the Chinese embassy in Austria.
- October 2004 – **Diploma in Mathematics**, with *A. Constantin*, *University of Vienna*, Austria, graduated with distinction.  
– Dec. 2010
- June 2004 **School leaving exam**, *HTBLuVA Mödling*, Austria, graduated with distinction.

## Employment

- since June 2020 **Post Doc**, *Faculty of Mathematics, University of Vienna*, Austria.
- since Nov. 2019 **Software developer**, *dimetor*, Vienna.
- October 2017 – **Teaching assistant**, *University of Vienna*, Austria.  
– June 2018 Lecturer for exercise classes in Linear Algebra and Analysis.
- March 2013 – **Piano Teacher**, *Für Elise music school*, *Beijing*, China.  
June 2014 Piano teacher for Chinese children.
- October 2012 – **Head of Office**, *Bureau for women policy of the Austrian National Student Union at the University of Music Vienna*, Austria.  
– March 2017 Supporting students in Gender related topics.
- since 2011 **Substitute piano accompanist**, *Choir wienAccord*, Austria.

## Main areas of research

Multivariate subdivision, Applied harmonic analysis, Numerical linear algebra, Radio wave propagation

## Talks and poster

26. – 30. August 2019 **Modified invariant polytope algorithm – Computing the JSR**, *ESI Workshop: Multivariate Approximation and Interpolation with Applications*, Vienna, Austria.
2. April 2019 **Joint spectral radius and subdivision schemes**, *University of Passau*, Germany.
4. – 8. March 2019 **Modified invariant polytope algorithm and t-toolboxes for Matlab**, *IM-Workshop 2019 on Signals, Images, and Approximation 2019*, Bernried, Germany.
28. June – 4. July 2018, **Computing the joint spectral radius of large matrices: practical issues**, *9th International Conference on Curves and Surfaces*, Arcachon, France.
17. – 21. Sept. 2017 **Regularity of anisotropic subdivision**, *Second Conference on Subdivision, Geometric and Algebraic Methods, Isogeometric Analysis and Refinability*, Gaeta, Italy.
23. – 26. April 2017 **M&M's Schemes**, *VDS Retreat Strobl 2017*, Strobl, Austria.
27. Febr. – 3. March 2017 **Joint spectral radius and multiple subdivision**, *IM-Workshop 2017 on Signals, Images, and Approximation*, *University of Vienna*, Austria.
12. October 2016 **Real-time computation and approximation error [of frequency warped frames]**, *WARPED Day (FLAME workshop)*, *Acoustic Research Institute at the ÖAW*, Austria.
24. September 2016 **Functional magnetic resonance imaging - Gender and sex**, *hmdw seminar*, Payerbach, Austria.

## Software

- t-toolboxes Methods for computation of the joint spectral radius and regularity analysis multiple subdivision schemes. [mathworks.com/matlabcentral/fileexchange/70449](https://mathworks.com/matlabcentral/fileexchange/70449)
- wabor Plug-in for PureData for analysis and synthesis of audio signals with frequency warped frames. [tommsch.com/science.php](http://tommsch.com/science.php)

## Languages

|         |               |         |        |
|---------|---------------|---------|--------|
| German  | Mother tongue | English | fluent |
| Chinese | Moderate      |         |        |

## Other skills and Hobbies

Technical drawing, Good technical understanding  
C, C++, Cuda, Matlab  
LaTeX, Photoshop, Sibelius, Excel  
Ballet: Beginner

## Publications

### Preprint

- Thomas Mejstrik, Vladimir Yu. Protasov *Elliptic polytopes and invariant norms of linear operators* Mathematical Programming, submitted for publication.
- Thomas Mejstrik, Taulant Berisha, Sebastian Woblistin *Fast computation of radio wave propagation effects*, IEEE Trans. Wireless Comm., submitted for publication.

### Peer reviewed

- Maria Charina, Costanza Conti, Thomas Mejstrik, Jean-Louis Merrien, *Joint Spectral Radius and Ternary Hermite Subdivision*, *Adv. Comput. Math.*, 47 (2021) 25, hal: 02615136 doi: 10.1007/s10444-021-09854-x
- Thomas Mejstrik, *Improved invariant polytope algorithm and applications*, *ACM Trans. Math. Softw.*, 46, 3 ( 2020 ) 29, arXiv: 1812.03080, doi: 10.1145/3408891
- Maria Charina, Thomas Mejstrik, *Multiple multivariate subdivision schemes: Matrix and operator approaches*, *Comp. Appl. Math.*, 349 (2018), 279–291, doi: 10.1016/j.cam.2018.08.013, arXiv: 1808.08050.
- Thomas Mejstrik, Gianpaolo Evangelista, *Estimates of the Reconstruction Error in Partially Redressed Warped Frames Expansions*, *Proc. of Digital Audio Effect Conf. (DAFx16)*, (2016), 9–16, [dafx16.vutbr.cz/dafxpapers](http://dafx16.vutbr.cz/dafxpapers), arXiv: 1812.03279.
- Thomas Mejstrik, *Some Remarks on Nagumo's Theorem*, *Czechoslovak Mathematical Journal*, 62 (2012) 1, 235–242, doi: 10.1007/s10587-012-0008-7, [tommsch.com/misc/remarks\\_nagumo.pdf](http://tommsch.com/misc/remarks_nagumo.pdf).