

EDUCATION

- **Fraunhofer IIS and University of Erlangen-Nürnberg** Germany
PhD/ Dr.-Ing. (Summa cum laude) 2019
 - **PhD Thesis:** “Separation and Count Estimation for Audio Sources Overlapping in Time and Frequency”, International Audio Laboratories Erlangen, Examiners: Prof. Dr.-Ing. Bernd Edler (AudioLabs), Prof. Gaël Richard PhD. (ParisTech)
- **University of Hannover** Germany
Diplom Ingenieur/Master of Science in Electrical Engineering. 2012
 - **Master thesis:** “Low Delay Error Concealment for Audio signals”, Institute for Information Processing, Examiner: Prof. Dr.-Ing Jörn Ostermann.
 - **Study Project/Bachelor Thesis:** “Image Segmentation Using Graph-Cuts”, Institute for Information Processing in Hannover, Examiner: Prof. Dr. Bodo Rosenhahn.

EXPERIENCE

- **Inria and LIRMM** Montpellier, France
Research Engineer 2017 - Present
 - **Kamoulox Project (ANR):** Research of AI based audio restoration techniques on big data. Development of open-source implementation of source separation and enhancement (Open-Unmix).
 - **ML based Music Separation:** Collaborations with members of Inria with respect to life science applications such as bird sound classification.
- **International Audio Laboratories Erlangen** Erlangen, Germany
Research and Teaching Assistant 2012 - 2017
 - **Research Interests:** audio signal processing, machine learning and deep learning, signal representations, auditory filter banks and modulations, perceptual evaluation for music and speech, speaker count estimation.
 - **Teaching:**
Seminars: Reproducible Audio Research Seminar.
Laboratory Courses: Statistical Methods for Audio Experiments in R (2013-2016)
Courses: Introduction to Multimedia Programming,
Supervision: 3 master students, 2 bachelor students, 2 interns, and many student assistants.
- **Dolby Inc.** Nuremberg, Germany
Engineering Intern 2011 (7 months)
 - **Testing and Productization:** Reimplementation of a PCM-Audio tool for testing and analysis purposes.
 - **Professional Licensing:** Development of a multichannel audio recording tool for broadcasting test cases.
- **FAROIT.COM** Germany
Entrepreneurship 2001 - 2014
 - **IT Consulting:** Web Application Engineering , Web Services. Approx. 2500 working hours for various PR-companies, private banks and marketing companies.

SCIENTIFIC SERVICES

- **SiSEC:** SiSEC (Separation Evaluation Challenge) MUS task co-chair
- **BirdCLEF:** Task organizer for the bird classification task.
- **Open Source Contributions (Github):** awesome-python-scientific-audio, musdb, museval, librosa, mireval
- **Reviewing:** IEEE Transactions on Audio, Speech and Language Processing, EURASIP, ICASSP, ISMIR, DAFx, Web Audio Conference

INVITED TALKS/TUTORIALS/SUMMER SCHOOLS

- **Course (3h):** »Introduction to Deep Learning«, Montpellier, 2019 and 2020, Polytech University)
- **Tutorial (3h):** »Music Separation with DNNs: Making It Work«, ISMIR, 2018 (Paris, September 4th, 2018)
- **Invited Talk (1h):** »Deep Learning for Music Unmixing«, Deep Learning: from theory to applications, Technicolor (Rennes, September 23th, 2018)
- **Tutorial (3h):** »Music Separation with DNNs: Making It Work«, ISMIR, 2018 (Paris, September 4th, 2018)
- **Presentation:** Summer School for Pitch, Music and Associated Pathologies (Lyon, 2014)

SKILLS AND TOOLS

- **Programming Languages:** Python, Javascript, Matlab, R, C, Java, Julia, SQL
- **DevOps/Deployment Tools:** Docker, Kubernetes, Git, Github/Gitlab, AWS, HPC, pytest
- **Machine Learning Frameworks:** PyTorch, Tensorflow, Keras, NNabla, Scikit-Learn, statsmodels
- **Web Frameworks:** web audio api, vuejs, flask, django, ruby-on-rails

LANGUAGES

- **German:** native **English:** fluent (C1) **French:** basic (A2)

SELECTED PUBLICATIONS

- F.-R. Stöter, S. Uhlich, A. Liutkus, and Y. Mitsufuji. *Open-Unmix - A Reference Implementation for Music Source Separation*, Journal of Open Source Software, 2019
- A. Liutkus, U. Simsekli, S. Majewski, A. Durmus, and F.-R. Stöter. *Sliced-Wasserstein Flows: Nonparametric Generative Modeling via Optimal Transport and Diffusions.*, ICML 2019.
- E. Cano, D. FitzGerald, A. Liutkus, MD. Plumbley, and F.-R. Stöter. *Musical Source Separation: An Introduction* IEEE Signal Processing Magazine, 36, 2019.
- F.-R. Stöter, S. Chakrabarty, B. Edler, and E. A. P. Habets. *CountNet: Estimating the Number of Concurrent Speakers Using Supervised Learning*. IEEE/ACM Transactions on Audio, Speech, and Language Processing, Nov. 2018.
- F.-R. Stöter, S Chakrabarty, B. Edler, and E.A.P. Habets. *Classification vs. Regression in Supervised Learning for Single Channel Speaker Count Estimation*. International Conference on Acoustics, Speech and Signal Processing (ICASSP). Calgary, Canada, 2018.
- Z. Rafii, A. Liutkus, F. R. Stöter, S. I. Mimilakis, D. FitzGerald, and B. Pardo. *An Overview of Lead and Accompaniment Separation in Music*. In: IEEE/ACM Transactions on Audio, Speech, and Language Processing, Aug. 2018.
- F.R. Stöter, A. Liutkus, and N. Ito, *The 2018 Signal Separation Evaluation Campaign*. International Conference on Latent Variable Analysis and Signal Separation, 2018.
- M. Schoeffler, S. Bartoschek, F.R. Stöter, M. Roess, S. Westphal, B. Edler and J. Herre, *webMUSHRA—A Comprehensive Framework for Web-based Listening Tests* Journal of Open Research Software, 2018.
- A. Liutkus, F.-R. Stöter, Z. Rafii, D. Kitamura, B. Rivet, N. Ito, N. Ono, and J. Fontecave *The 2016 Signal Separation Evaluation Campaign* Proc. of Latent Variable Analysis and Signal Separation, Grenoble, France, 2017.
- F.-R. Stöter, A. Liutkus, R. Badeau, B. Edler, and P. Magron *Common Fate Model for Unison Source Separation* International Conference on Acoustics, Speech and Signal Processing (ICASSP), Shanghai, China, 2016.
- M. Schoeffler, F.-R. Stöter, B. Edler, and J. Herre *Towards the next generation of web-based experiments: a case study assessing basic audio quality following the ITU-R BS1534 (MUSHRA)* 1st Web Audio Conference, Paris, France, 2016.
- F.-R. Stöter, M. Müller, and B. Edler *Multi-Sensor Cello Recordings for Instantaneous Frequency Estimation*. Proceedings of the ACM Multimedia, Brisbane, Australia, 2015.
- F.-R. Stöter, N. Werner, S. Bayer, and B. Edler *Refining Fundamental Frequency Estimates using Time Warping*. Proceedings of EUSIPCO, Nice, France, 2015.
- F.-R. Stöter, S. Bayer, and B. Edler *Unison Source Separation, International Conference on Digital Audio Effects*. Proceedings of the International Conference on Digital Audio Effects (DAFx), Erlangen, Germany, 2014.
- F.-R. Stöter, M. Schoeffler, B. Edler and J. Herre *Human ability of counting the number of instruments in polyphonic music*. Proceedings of Meetings on Acoustics, Curitiba, Brazil, 2013
- M. Schoeffler, F.-R. Stöter, H. Bayerlein, B. Edler and J. Herre *An experiment about estimating the number of instruments in polyphonic music: a comparison between internet and laboratory results*. Proceedings of the International Society for Music Information Retrieval Conference (ISMIR), 2013.