

Dr.-Ing. Jens Schneider

Curriculum Vitae

Personal Information

Date of Birth 30.09.1990

Nationality German

Education

01/2016–11/2021 **Doctoral Studies in Video Compression**, *RWTH Aachen University*

10/2013–12/2015 **Electrical Engineering M.Sc.**, *RWTH Aachen University*

10/2010–09/2013 **Electrical Engineering B.Sc.**, *RWTH Aachen University*

08/2001–07/2010 **Abitur**, *Viktoriaschule, Aachen*

Dissertation

Title *Sparse Signal Modeling in Video Coding*

Description Implementation and analysis of sparse signal models in the context of hybrid video coding and higher level coding schemes.

Professional Experience

01/2024–today **Senior Video Coding Researcher**, *MainConcept GmbH*

Research and Development in the area of video coding with a strong focus on encoding optimization via machine learning. Optimization of video encoders with respect to visual quality. Setup and maintenance of a modern cloudnative compute and simulation infrastructure. Implementation of algorithms in MainConcept's video encoders for AVC, HEVC, and VVC.

02/2022–12/2023 **Software Engineer**, *23 Technologies*

Development of software components for the open source Kubernetes Engine Gardener. Development of a Deployment- und Maintenancetool for Gardener landscapes. Deployment of cloud native solutions for the research project SMD4FZI, especially in the field of asset administration shell infrastructure.

01/2016–01/2022 **Researcher**, *RWTH Aachen University*, Institut für Nachrichtentechnik

Research in the field of video coding and machine learning. Mathematical modeling and implementation of the corresponding models in the reference software packages for HEVC, SHVC, and VVC. Build up and lead of a team of students for the development of algorithms and analysis tools. Teaching at bachelor's and master's level. System administration (GNU/Linux).

Scholarships

2010–2016 **Cusanuswerk**
Interdisciplinary Education, participation in four summer schools

Programming Experience

Matlab, Python, C++

Scientific Programming

Go, Shell

Cloud/Kubernetes Programming

Languages

German native

English fluent

Volunteer Work

03/2018–today **Tennis Club Aachen-Vaalseerquartier 1986 e.V**

Member of the executive board

since 2014 **Cusanuswerk**

Software development project for automatic assignment of participants to summer school seats

Publications

- [1] C. Rohlfing, T. Meyer, J. Schneider, and J. Voges, "Python wrapper for context-based adaptive binary arithmetic coding," in *Visual Communications and Image Processing VCIP '23*, (Jeju, South Korea), IEEE, Piscataway, Dec. 2023.
- [2] J. Schneider, *Sparse Signal Modeling in Video Coding*, vol. 24 of *Aachen Series on Multimedia and Communications Engineering*. Aachen: Shaker Verlag, Jan. 2022.
- [3] J. Schneider, J. Sauer, and M. Wien, "Rdplot – an evaluation tool for video coding simulations," in *Visual Communications and Image Processing VCIP '21*, (Munich), IEEE, Piscataway, 12 2021.
- [4] J. Schneider and C. Rohlfing, "Dictionary learning-based reference picture resampling in vvc," in *Visual Communications and Image Processing VCIP '21*, (Munich), IEEE, Piscataway, 12 2021.
- [5] J. Schneider, D. Mehlem, M. Meyer, and C. Rohlfing, "Sparse Coding-based Intra Prediction in VVC," in *2021 Picture Coding Symposium (PCS)*, (Bristol, UK), June 2021.
- [6] J. Schneider, J. Sauer, and C. Rohlfing, "Adaptive resolution change using uncoded areas and dictionary learning-based super-resolution in versatile video coding," in *ICASSP 2020 - 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 2203–2207, 2020.

- [7] J. Schneider, M. Bläser, and M. Wien, "Sparse Coding based Frequency Adaptive Loop Filtering for Video Coding," in *Proc. of Packet Video '18*, (Amsterdam, Netherlands), ACM, June 2018.
- [8] J. Schneider, J. Sauer, and M. Wien, "Dictionary Learning based High Frequency Inter-Layer prediction for Scalable HEVC," in *Proc. of IEEE Visual Communications and Image Processing VCIP '17*, (St. Petersburg, USA), IEEE, Piscataway, Dec. 2017.
- [9] J. Schneider, J. Sauer, and M. Wien, "Enhanced view synthesis prediction for coding of non-coplanar 3d video sequences," in *2016 Picture Coding Symposium (PCS)*, pp. 1–5, 2016.

Aachen, March 19, 2025