

Academic Curriculum Vitæ

Details

Professional titles: FH-Prof.
Titles: Dipl.-Ing. (FH) Dipl.-Ing. Dr. techn.
Name: **Andreas Unterweger**
Address: Franz-Martin-Straße 4B/3, 5020 Salzburg, Austria
Telephone number: (43-664) 178 15 78
Email address: dustsigns@dustsigns.de
Date of birth: July 31, 1986
Languages: German (mother tongue), English (fluent),
French (conversational), Italian and Spanish (basic)

Research interests

- Smart Grid privacy and security
- Real-time video coding (especially H.264- and H.265-based video coding)

Education

- March 2012 – February 2015: Doctoral degree *Dr. techn.* (thesis advisor: Univ.-Prof. Mag. Dr. Andreas Uhl) in Engineering Sciences, *Department of Computer Sciences*, University of Salzburg, Salzburg, Austria.
- October 2009 – December 2011: Master's degree *Dipl.-Ing.* (with distinction; thesis advisor: Univ.-Prof. Dr.-Ing. Christoph Kirsch) in Applied Computer Science, *Department of Computer Sciences*, University of Salzburg, Salzburg, Austria.
- September 2004 – June 2008: Diploma degree *Dipl.-Ing. (FH)* (with distinction; thesis advisor: Dipl.-Ing. (FH) Peter Haber) in Information Technology and Systems Management, *School of Information Technology and Systems Management*, Salzburg University of Applied Sciences, Puch bei Hallein, Austria.

Work experience

Recent lecturing positions

- February 2016 – now: External lecturer at the *School of Web Business & Technology*, Kufstein University of Applied Sciences, Kufstein, Austria.

- March 2015 – now: Senior lecturer (teaching professor (*FH-Prof.*) since May 2016) at the *School of Information Technology and Systems Management*, Salzburg University of Applied Sciences, Puch bei Hallein, Austria.
- February 2012 – January 2015: External lecturer at the *School of Information Technology and Systems Management*, Salzburg University of Applied Sciences, Puch bei Hallein, Austria.

Recent research positions

- January 2018 – now: Senior researcher at the *Center for Secure Energy Informatics*, Salzburg University of Applied Sciences, Puch bei Hallein, Austria.
- January 2018 – March 2018: Postdoctoral fellow at the *School of Electrical and Computer Engineering*, Cornell University, Ithaca, New York, USA.
- March 2015 – December 2017: Senior researcher at the *Josef Ressel Center for User-Centric Smart Grid Privacy, Security and Control*, Salzburg University of Applied Sciences, Puch bei Hallein, Austria.

Recent industry positions

- July 2018 – now: Software engineer for low-delay streaming, NativeWaves, Puch bei Hallein, Austria.
- July 2017 – August 2017: Software engineer for low-delay streaming, NativeWaves, Puch bei Hallein, Austria.
- December 2012 – March 2015: Pro-bono scientific and technical consultant on image processing and computer vision, Authentic Vision, Salzburg, Austria.
- June 2012 – November 2012: Video coding consultant (freelancer), streamlife AG, Potsdam, Germany.
- July 2008 – August 2009: Software engineer and video codec specialist, Ocilion IPTV Technologies, Ried im Innkreis, Austria.

Selected open source project contributions

- *FFmpeg* and *Libav* (audio and video coding libraries): API usage example for audio transcoding with extensive documentation, <https://github.com/FFmpeg/FFmpeg> and <https://github.com/libav/libav>, 2013-2015 and 2017-2018.
- *Multimedia Lecture Demonstrations* (illustration of core concepts of audio, image and video processing as well as related topics): Author, <https://github.com/dustsigns/lecture-demos>, 2016-2018.

Selected awards

- Science award, Chamber of Labour Salzburg, Salzburg, Austria, November 2015.
- Prize of appreciation, Federal Austrian Ministry of Science and Research, Vienna, Austria, November 2008.

Selected publications

Book chapters

- Knirsch, Fabian, Andreas Unterweger, Günther Eibl, and Dominik Engel: Privacy-Preserving Smart Grid Tariff Decisions with Block-Chain-Based Smart Contracts. In Rivera, Wilson (editor): Sustainable Cloud and Energy Services – Principles and Practice, chapter 4, pages 85–116. Springer International Publishing, Cham, Switzerland, September 2017, ISBN 978-3-319-62237-8. Download.
- Unterweger, Andreas: Compression Artifacts in Modern Video Coding and State-of-the-Art Means of Compensation. In Farrugia, Reuben A. and Carl James Debono (editors): Multimedia Networking and Coding, chapter 2, pages 28–49. IGI Global, Hershey, Pennsylvania, USA, January 2013, ISBN 978-1-4666-2660-7. Download.

Journal articles

- Knirsch, Fabian, Andreas Unterweger, and Dominik Engel: Privacy-preserving Blockchain-based Electric Vehicle Charging with Dynamic Tariff Decisions. Computer Science – Research and Development, 33(1):71–79, February 2018. Download.
- Unterweger, Andreas and Dominik Engel: Resumable Load Data Compression in Smart Grids. IEEE Transactions on Smart Grid, 6(2):919–929, March 2015. Download.

Conference papers

- Burkhart, Sebastian, Andreas Unterweger, Günther Eibl, and Dominik Engel: Detecting Swimming Pools in 15-Minute Load Data. In 2018 17th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom), pages 1651–1655, New York, New York, USA, August 2018. IEEE. Download.
- Unterweger, Andreas and Dominik Engel: Lossless Compression of High-Frequency Voltage and Current Data in Smart Grids. In 2016 IEEE International Conference on Big Data (Big Data), pages 3131–3139, Washington D.C., USA, December 2016. IEEE. Download.

Conference organization

Local organizing chair

- 11th International Conference on Availability, Reliability and Security (ARES 2016), Salzburg, Austria, August-September 2016.
- Workshop on Privacy Enhancing Technologies and Security Solutions for the Smart Grid User Domain (PRETSELS), Salzburg, Austria, September 2015.
- 2nd ACM Workshop on Information Hiding and Multimedia Security (IH&MMSec'14), Salzburg, Austria, June 2014.

Selected review activities

Journals

- Future Generation Computer Systems, Elsevier, 2018.
- Journal of Network and Computer Applications, Elsevier, 2018.
- IEEE Transactions on Industrial Informatics, IEEE, 2017.
- IEEE Transactions on Smart Grid, IEEE, 2015-2017, 2019.
- IEEE Transactions on Power Systems, IEEE, 2016.
- European Association for Signal Processing (EURASIP) Journal on Information Security, Springer, 2015-2018.
- IEEE Transactions on Circuits and Systems for Video Technology, IEEE, 2014, 2015 and 2017.
- Signal Processing: Image Communication, Elsevier, 2014 and 2016-2018.

Teaching

Lectures

- IT Security. *School of Web Business & Technology* (Bachelor's degree program, semester 4), Kufstein University of Applied Sciences, Kufstein, Austria, summer semesters 2017 and 2018.
- Media Technology. *School of Information Technology and Systems Management* (Bachelor's degree program, semester 4), Salzburg University of Applied Sciences, Puch bei Hallein, Austria, summer semesters 2014-2018.
- Media Informatics. *School of Information Technology and Systems Management* (Bachelor's degree program, semester 5), Salzburg University of Applied Sciences, Puch bei Hallein, Austria, winter semesters 2013/2014-2018/2019.

Guest lectures

- Face encryption in surveillance videos. Warsaw University of Technology, Warsaw, Poland, May 2017.
- Privacy in Smart Grids. Warsaw University of Technology, Warsaw, Poland, May 2017.
- Selected coding methods in H.265/HEVC. Warsaw University of Technology, Warsaw, Poland, May 2017.
- Real-time H.264 Video Coding for Telemedicine Applications. ESIGETEL, Avon, France, November 2010 and November 2011.

Recent courses

- Laboratory for Cryptology. *School of Information Technology and Systems Management* (Bachelor's degree program, semester 4), Salzburg University of Applied Sciences, Puch bei Hallein, Austria, summer semester 2018.
- IT Security Lab. *School of Web Business & Technology* (Bachelor's degree program, semester 4), Kufstein University of Applied Sciences, Kufstein, Austria, summer semesters 2016-2018.
- Laboratory for Media Technology. *School of Information Technology and Systems Management* (Bachelor's degree program, semester 4), Salzburg University of Applied Sciences, Puch bei Hallein, Austria, summer semesters 2014-2018.
- Laboratory for Media Informatics. *School of Information Technology and Systems Management* (Bachelor's degree program, semester 5), Salzburg University of Applied Sciences, Puch bei Hallein, Austria, winter semesters 2013/2014-2018/2019.

Selected supervised theses

Master's theses

- Fröhlich, Alexander: Vergleich von alternativen Farbfilterlayouts mit dem Bayer-Pattern. Master's thesis, Salzburg University of Applied Sciences, Puch bei Hallein, Austria, September 2013.

Bachelor theses

- Höckner, Daniel: Bildfehler durch Sensorverschmutzung bei Digitalkameras. Bachelor 2 thesis, Salzburg University of Applied Sciences, Puch bei Hallein, Austria, September 2017.