

Publications

Books

Voges, J. *Compression of DNA Sequencing Data*. VDI Verlag, 2022. DOI: [10.51202/9783186878106-I](https://doi.org/10.51202/9783186878106-I).

Journal Articles

Maier, H. B., Neyazi, A., Bundies, G. L., Meyer-Bockenkamp, F., Bleich, S., Pathak, H., Ziert, Y., Neuhaus, B., Müller, F.-J., Pollmann, I., Illig, T., Mücke, S., Müller, M., Möller, B. K., Oeltze-Jafra, S., Kacprowski, T., **Voges, J.**, Müntefering, F., Scheiber, J., Reif, A., Aichholzer, M., Reif-Leonhard, C., Schmidt-Kassow, M., Hegerl, U., Reich, H., Unterecker, S., Weber, H., Deckert, J., Bössel-Debbert, N., Grabe, H. J., Lucht, M., and Frieling, H. “Validation of the predictive value of BDNF -87 methylation for antidepressant treatment success in severely depressed patients—a randomized rater-blinded trial”. In: *Trials* 25.1 (Apr. 2024), p. 247. DOI: [10.1186/s13063-024-08061-5](https://doi.org/10.1186/s13063-024-08061-5).

Müntefering, F., Adhisantoso, Y. G., Chandak, S., Ostermann, J., Hernaez, M., and **Voges, J.** “Genie: the first open-source ISO/IEC encoder for genomic data”. In: *Communications Biology* 7.1 (May 2024), p. 553. DOI: [10.1038/s42003-024-06249-8](https://doi.org/10.1038/s42003-024-06249-8).

Adhisantoso, Y. G., **Voges, J.**, Rohlfing, C., Tunev, V., Ohm, J.-R., and Ostermann, J. “GVC: efficient random access compression for gene sequence variations”. In: *BMC Bioinformatics* 24.1 (Mar. 2023), p. 121. DOI: [10.1186/s12859-023-05240-0](https://doi.org/10.1186/s12859-023-05240-0).

Voges, J., Hernaez, M., Mattavelli, M., and Ostermann, J. “An Introduction to MPEG-G: The First Open ISO/IEC Standard for the Compression and Exchange of Genomic Sequencing Data”. In: *Proceedings of the IEEE* 109.9 (Sept. 2021), pp. 1607–1622. DOI: [10.1109/JPROC.2021.3082027](https://doi.org/10.1109/JPROC.2021.3082027).

Laude, T., Adhisantoso, Y. G., **Voges, J.**, Munderloh, M., and Ostermann, J. “A Comprehensive Video Codec Comparison”. In: *APSIPA Transactions on Signal and Information Processing* 8.1 (Nov. 2019). DOI: [10.1017/ATSIP.2019.23](https://doi.org/10.1017/ATSIP.2019.23). Resources: [main paper \(PDF\)](#).

Voges, J., Paridaens, T., Müntefering, F., Mainzer, L. S., Bliss, B., Yang, M., Ochoa, I., Fostier, J., Ostermann, J., and Hernaez, M. “GABAC: an arithmetic coding solution for genomic data”. In: *Bioinformatics* 36.7 (Dec. 2019), pp. 2275–2277. DOI: [10.1093/bioinformatics/btz922](https://doi.org/10.1093/bioinformatics/btz922).

Voges, J., Fotouhi, A., Ostermann, J., and Külekci, M. O. “A Two-Level Scheme for Quality Score Compression”. In: *Journal of Computational Biology* 25.10 (Oct. 2018), pp. 1141–1151. DOI: [10.1089/cmb.2018.0065](https://doi.org/10.1089/cmb.2018.0065). Resources: [main paper \(PDF\)](#).

Voges, J., Ostermann, J., and Hernaez, M. “CALQ: compression of quality values of aligned sequencing data”. In: *Bioinformatics* 34.10 (Nov. 2017), pp. 1650–1658. DOI: [10.1093/bioinformatics/btx737](https://doi.org/10.1093/bioinformatics/btx737).

Numanagić, I., Bonfield, J. K., Hach, F., **Voges, J.**, Ostermann, J., Alberti, C., Mattavelli, M., and Sahinalp, S. C. “Comparison of high-throughput sequencing data compression tools”. In: *Nature Methods* 13.12 (Dec. 2016), pp. 1005–1008. DOI: [10.1038/nmeth.4037](https://doi.org/10.1038/nmeth.4037).

Patents

- Voges, J.** and Ostermann, J. “Method for encoding and decoding of quality values of a data structure”. Mar. 19, 2024. [CN110915140B](#).
- Munderloh, M., **Voges, J.**, and Ostermann, J. “Method for compressing genomic data”. Sept. 27, 2023. [EP3311318B1](#).
- Voges, J.** and Ostermann, J. “Method for encoding and decoding of quality values of a data structure”. May 11, 2022. [EP3652862B1](#).
- Voges, J.** and Ostermann, J. “Method for encoding and decoding of quality values of a data structure”. Mar. 2, 2021. [US10938415B2](#).

Conference Papers

- Rohlfing, C., Meyer, T., Schneider, J., and **Voges, J.** “Python Wrapper for Context-based Adaptive Binary Arithmetic Coding”. In: *2023 IEEE International Conference on Visual Communications and Image Processing (VCIP)*. Dec. 2023. Resources: [link](#), [main paper \(PDF\)](#).
- Ochoa, I., Li, H., Baumgarte, F., Hergenrother, C., **Voges, J.**, and Hernaez, M. “AliCo: A New Efficient Representation for SAM Files”. In: *2019 Data Compression Conference (DCC)*. Mar. 2019, pp. 93–102. DOI: [10.1109/DCC.2019.00017](#).
- Hernandez-Lopez, A. A., **Voges, J.**, Alberti, C., Mattavelli, M., and Ostermann, J. “Lossy Compression of Quality Scores in Differential Gene Expression: A First Assessment and Impact Analysis”. In: *2018 Data Compression Conference (DCC)*. Mar. 2018, pp. 167–176. DOI: [10.1109/DCC.2018.00025](#).
- Laude, T., Adhisantoso, Y. G., **Voges, J.**, Munderloh, M., and Ostermann, J. “A Comparison of JEM and AV1 with HEVC: Coding Tools, Coding Efficiency and Complexity”. In: *2018 Picture Coding Symposium (PCS)*. June 2018, pp. 36–40. DOI: [10.1109/PCS.2018.8456291](#).
- Hernandez-Lopez, A. A., **Voges, J.**, Alberti, C., Mattavelli, M., and Ostermann, J. “Differential Gene Expression with Lossy Compression of Quality Scores in RNA-Seq Data”. In: *2017 Data Compression Conference (DCC)*. Apr. 2017, p. 444. DOI: [10.1109/DCC.2017.75](#).
- Alberti, C., Daniels, N., Hernaez, M., **Voges, J.**, Goldfeder, R. L., Hernandez-Lopez, A. A., Mattavelli, M., and Berger, B. “An Evaluation Framework for Lossy Compression of Genome Sequencing Quality Values”. In: *2016 Data Compression Conference (DCC)*. Mar. 2016, pp. 221–230. DOI: [10.1109/DCC.2016.39](#).
- Voges, J.**, Munderloh, M., and Ostermann, J. “Predictive Coding of Aligned Next-Generation Sequencing Data”. In: *2016 Data Compression Conference (DCC)*. Mar. 2016, pp. 241–250. DOI: [10.1109/DCC.2016.98](#).

Talks, Posters, Miscellaneous

- Maharlou, H., Bössel-Debbert, N., Weber, H., Weihs, A., Frieling, H., Oeltze-Jafra, S., Lucht, M., Maier, H. B., Mücke, S., Müntefering, F., Neuhaus, B., Prokein, J., Reif-Leonhard, C., and **Voges, J.** *Cooperative Design of a Dashboard for Monitoring the P4D Cohort Study on Major Depression*. May 2024. DOI: [10.2312/evp.20241081](#). Poster presented at EuroVis 2024.
- Schröder, S. K., Adhisantoso, Y. G., Stare, T., Colotte, M., Glöckler, J., Frohme, M., Balestra, G., **Voges, J.**, and Karčnik, T. *PEARL-DNA — Revolutionizing Sustainable DNA-Based Data Storage*. July 2024. Poster presented at the ISIT 2024 satellite workshop “Coding Theory and Algorithms for DNA-based Data Storage”. Resources: [poster \(PDF\)](#).
- Adhisantoso, Y. G., Ostermann, J., and **Voges, J.** *PEKORA: High-Performance 3D Genome Reconstruction Using K-th Order Spearman’s Rank Correlation Approximation*. July 2023. Presentation by YGA at ISMB/ECCB 2023 (HiTSeq track). Resources: [abstract \(PDF\)](#).
- Müntefering, F., Ostermann, J., and **Voges, J.** *BACON: Bacterial Clone Recognition from Metagenomic Sequencing Data*. Sept. 2023. Oral presentation by FM at AICPM 2023. *Best Presentation Award*. Resources: [abstract \(PDF\)](#).

Paridaens, T., **Voges, J.**, Hernaez, M., Fostier, J., and Ostermann, J. *GABAC: an arithmetic coding solution for genomic data*. Aug. 2019. DOI: [10.7490/f1000research.1117346.1](https://doi.org/10.7490/f1000research.1117346.1). Poster presented at ISMB/ECCB 2019.

Voges, J. and Ostermann, J. *MPEG-G: The Emerging Standard for Genomic Data*. Sept. 2017. DOI: [10.7287/peerj.preprints.3268v1](https://doi.org/10.7287/peerj.preprints.3268v1). Poster presented at GCB 2017. Resources: [poster \(PDF\)](#).

Voges, J., Ostermann, J., and Hernaez, M. *CALQ: compression of quality values of aligned sequencing data*. Aug. 2017. DOI: [10.7490/f1000research.1114635.1](https://doi.org/10.7490/f1000research.1114635.1). Poster presented at ISMB/ECCB 2017.