



Dr. Daniel Wiegreffe

Curriculum Vitae

Personal Information

Fullname Daniel Wiegreffe
Born Name Gerighausen
Date of Birth 14.10.1989
Place of Birth Lingen (Ems)
Adress Image and Signal Processing Group
Institut für Informatik
Augustusplatz 10
04109 Leipzig
Email daniel@informatik.uni-leipzig.de
Nationality German
Civil Status Married, three children

Education

- 06/2019 **Dr. rer. nat., Computer Science,**
Universität Leipzig,
Thesis Title: Visual Analysis of Form and Function in Computational Biology,
Supervisor: Prof. Scheuermann.
- 03/2015 **Master of Science, Computer Science,**
Universität Leipzig,
Thesis Title: TiBi-3D - a Guide through the World of Epigenetics,
Supervisor: Prof. Scheuermann, Prof. Prohaska.
- 10/2013 – **Study of Master of Science, Computer Science,**
03/2015 *Universität Leipzig.*
- 09/2013 **Bachelor of Science, Computer Science,**
Universität Leipzig,
Thesis Title: Kombination von K-means++ Clustering und PCA zur Analyse von Chromatin-Daten,
Supervisor: Prof. Scheuermann.
- 10/2009 – **Study of Bachelor of Science, Computer Science,**
09/2013 *Universität Leipzig.*

08/2002 – **Gymnasium**, *Johanneum*,
06/2009 Lingen(Ems),
Gained university entrance qualification.

Professional Experience

- since 10/2021 **Tenured Researcher**,
Universität Leipzig.
- since 07/2020 **Project Coordinator**,
Universität Leipzig,
Coordination of the project 'Smart Regional Development Infrastructure'.
- 08/2018 – **Project Coordinator**,
06/2022 *Universität Leipzig*,
Coordination of the EFRE project 'Data Mining and Value Creation'.
- 04/2015 – **Scientific Research Assistant**,
07/2018 *Universität Leipzig*,
Developing new visualizations for Big Data from biological sources.
- 8/2013 – **Associate**,
12/2023 *Gurkware GbR*,
Development and marketing of software solutions.
- 4/2013 – **Student Assistant**,
12/2014 *Universität Leipzig*,
Assistance in the 'ChromatinVis' project,
Supervisor: Prof. Scheuermann, Prof. Prohaska, Dr. Zeckzer.
- 05/2010 – **IT Administrator**,
04/2012 *Lawyer Füßer und Kollegen*.

Publications and Conferences

- 2024 **Journal Paper**, *MutationExplorer-a webserver for mutation of proteins and 3D visualization of energetic impacts*, Philipp, Moth, Ristic, Tiemann, Seufert, Panfilova, Meiler, Hildebrand, Stein, Wiegrefe*, Staritzbichler, *Nucleic Acids Research*.
*shared last author
- 2024 **Workshop Paper**, *A Flexible Architecture for Web-based GIS Applications using Docker and Graph Databases*, Annanias, Wiegrefe, Accepted at Workshop on Visualisation in Environmental Sciences (EnvirVis).
- 2023 **Conference Paper**, *Development of a Semantic Segmentation Approach to Old-Map Comparison*, Annanias, Wiegrefe, Niekler, Kuźma, Harvey, 12th International Conference on Geographic Information Science (GIScience 2023).
- 2023 **Workshop Paper**, *Classification of Large and Heterogeneous LiDAR Data Sets*, Kaubukowski, Nsonga, Kretzschmar, Annanias, Wiegrefe, Hlawitschka, Workshop on Systems to Support Renaturation Projects 2023.
- 2023 **Workshop Paper**, *Nachnutzungskonzept für Daten in der Altlastenverwaltung*, Müller, Wiegrefe, Workshop on Systems to Support Renaturation Projects 2023.
- 2023 **Workshop Paper**, *An Interactive Decision Support System for Analyzing Time Related Restrictions in Renaturation and Redevelopment Planning Projects.*, Annanias, Meinecke, Wiegrefe, Workshop on Visualisation in Environmental Sciences (EnvirVis).

- 2022 **Workshop Paper**, *A demonstration system towards NLP and knowledge driven data platforms for Civil Engineering*, Borst, Meinecke, Wiegrefe, Niekler, GI Workshop KI-KMU 2022.
- 2022 **Journal Paper**, *An Interactive Decision Support System for Land Reuse Tasks*, Annanias, Zeckzer, Scheuermann, Wiegrefe, IEEE Computer Graphics and Applications.
- 2022 **Conference Poster**, *Visualizing Similarities between American Rap-Artists*, Meinecke, Schebera, Eschrich, Wiegrefe, EuroVis 2022 - Rome.
- 2022 **Journal Paper**, *MDsrv - visual sharing and analysis of molecular dynamics simulations*, Kampfrath, Staritzbichler, Pérez Hernández, Rose, Tiemann, Scheuermann Wiegrefe*, Hildebrand, Nucleic Acids Research.
*shared last author
- 2022 **Conference Paper**, *Chatbot Explorer: Towards an understanding of knowledge bases of chatbot systems*, Hausdorf, Müller, Scheuermann, Niekler, Wiegrefe, WSCG 2022 - Pilsen.
- 2022 **Workshop Paper**, *An Interactive Decision Support System for Analyzing and Linkage of Weather-Related Restrictions of Opencast Lignite Mines*, Annanias, Windolph, Wehlitz, Wiegrefe, LEVIA'22: Leipzig Symposium on Visualization in Applications 2022.
- 2022 **Workshop Paper**, *Visualizing Similarities between American Rap-Artists based on Text Reuse*, Meinecke, Schebera, Eschrich, Wiegrefe, LEVIA'22: Leipzig Symposium on Visualization in Applications 2022.
- 2021 **Workshop Paper**, *Report on the Correction of Erroneous Geometry Data in Recultivation Projects*, Annanias, Wahsner, Scheuermann, Wiegrefe, GI Workshop on Systems to Support Renaturation Projects 2021.
- 2021 **Conference Paper**, *Mining Legacy Issues in Open Pit Mining sites: Innovation & Support of Renaturalization and Land Utilization*, Schröder, Bürgl, Annanias, Niekler, Müller, Wiegrefe, Bender, Mengs, Scheuermann, Heyer, ACL-IJCNLP 2021.
- 2020 **Journal Paper**, *Masakari: visualization supported statistical analysis of genome segmentations*, Zeckzer, Hausdorf, Hinzmann, Müller, Wiegrefe, BMC Bioinformatics.
- 2020 **Conference Paper**, *Einsatz von Künstlicher Intelligenz (KI) für die Optimierung von Planungsprozessen im Wasserbau*, Sankowska, Kumbruck, Möller, Leyh, Niekler, Wiegrefe, Wasserbauliche Mitteilungen 63.
- 2019 **Workshop Paper**, *LocalCompanies: Visual Analytics of spatial aligned regional companies*, Hausdorf, Niekler, Wiegrefe, LEVIA 2019.
- 2018 **Summary Paper**, *Big Data Competence Center ScaDS Dresden/Leipzig: Overview and selected research activities*, Rahm, Nagel, Peukert, Jäkel, Gärtner, Wiegrefe, Zeckzer, Lehner, Datenbanken-Spektrum.
- 2018 **Journal Paper**, *RNApuzzler: Efficient Outerplanar Drawing of RNA-Secondary Structures*, Wiegrefe, Alexander, Stadler, Zeckzer, Oxford Bioinformatics.
- 2018 **Research Note**, *The Sierra Platinum Service for generating peak-calls for replicated ChIP-seq experiments*, Wiegrefe, Müller, Steuck, Zeckzer, Stadler, BMC Research Notes.
- 2018 **Conference Paper**, *Analyzing Histone Modifications Using Tiled Binned Clustering and 3D Scatter Plots*, Zeckzer, Wiegrefe, Müller, WSCG 2018 - Pilsen.
- 2018 **Conference Talk**, *Introduction of the Supergenome Browser*, 33rd TBI Winterseminar in Bled(Slovenia).
- 2017 **Conference Talk**, *RNApuzzler IV*, 15th Bioinf Herbstseminar in Doubice(Czech republic).

- 2017 **Conference Paper**, *iDotter - an interactive dot plot viewer*, Gerighausen, Hausdorf, Zänker, Zeckzer, WSCG 2017 - Pilsen.
- 2016 **Conference Paper**, *Analyzing Histone Modifications in iPS Cells Using Tiled Binned 3D Scatter Plots*, Zeckzer, Gerighausen, Müller, BDVA 2016 - Sydney.
- 2016 **Journal Paper**, *Sierra Platinum: a fast and robust peak-caller for replicated ChIP-seq experiments with visual quality-control and -steering*, Müller, Gerighausen*, Farman, Zeckzer, BMC Bioinformatics.
*shared first author
- 2016 **Conference Talk**, *RNApuzzler II*, 31st TBI Winterseminar in Bled(Slovenia).
- 2016 **Journal Paper**, *A consensus network of gene regulatory factors in the human frontal lobe*, Berto, Perdomo-Sabogal, Gerighausen, Qin, Nowick, Frontiers in Genetics.
- 2015 **Conference Talk**, *RNApuzzler*, 13th Bioinf Herbstseminar in Doubice(Czech republic).
- 2014 **Conference Talk**, *iDotter - An interactive dotplot viewer*, 12th Bioinf Herbstseminar in Doubice(Czech republic).
- 2014 **Shortpaper**, *Using Significant Word Co-occurrences for the Lexical Access Problem*, Feist, Gerighausen, Konrad, Richter, Eckart, Goldhahn, Quasthoff, CogAlex Workshop 2014.
- 2014 **Workshop Paper**, *Analyzing Chromatin Using Tiled Binned Scatterplot Matrices*, Zeckzer, Gerighausen, Steiner, J. Prohaska, BioVis 2014 – Boston.
- 2014 **Conference Poster**, *ChromatinVis: a tool for analyzing epigenetic data*, Gerighausen, Zeckzer, Steiner, J. Prohaska, at Vizbi 2014 - Heidelberg.
- 2014 **Conference Talk**, *Clustering to the power of 2*, Application of clustering algorithms on epigenetic data, 29th TBI Winterseminar in Bled(Slovenia).
- 2013 **Conference Talk**, *New visualizations of chromatin data*, 11th Bioinf Herbstseminar in Doubice(Czech republic).

Invited Talks and Seminars

- 2023 **The Moving Target of Visualization Software - Closing the Gap between Research and Application**, *Shonan Seminar 193*, Shonan, Japan.
- 2023 **Making Vis FAIR – Experiences from Computational Biology**, *Workshop on FAIR principles in Visualization Research and Practice*, Leipzig.
- 2021 **Supporting land reuse of former open pit mining sites through visualized spatial data**, *SFB 1199 - Seventh Annual Conference*, Leipzig.
- 2021 **Datenplattform für Renaturierungsprojekte ehemaliger Braunkohletagebau**, *kommunalwirtschaft.eu*, online.
- 2019 **Neue Datenplattform für Renaturierungsprojekte**, *NET19*, Leipzig.
- 2019 **Introduction to Big Data**, *Programming for Evolutionary Biology 19*, Berlin.
- 2018 **How to handle Big Data**, *Programming for Evolutionary Biology 18*, Berlin.

Teaching

- 04/2024 – **Lectureship**,
09/2024 *Universität Leipzig*,
Master Course 'Medizinische Bildverarbeitung und Computer Vision'.
- 10/2023 – **Lectureship**,
03/2024 *Universität Leipzig*,
Bachelor Course 'Interactive Visual Data Mining'.
- 04/2023 – **Lectureship**,
09/2023 *Universität Leipzig*,
Master Course 'Medizinische Bildverarbeitung'.
- 10/2022 – **Lectureship**,
03/2023 *Universität Leipzig*,
Bachelor Course 'Interactive Visual Data Mining'.
- 04/2022 – **Lectureship**,
09/2022 *Universität Leipzig*,
Master Course 'Medizinische Bildverarbeitung'.
- 10/2021 – **Lectureship**,
03/2022 *Universität Leipzig*,
Bachelor Course 'Interactive Visual Data Mining'.
- 04/2021 – **Lectureship**,
09/2021 *Universität Leipzig*,
Bachelor Course 'Computergrafik'.
- 10/2020 – **Lectureship**,
03/2021 *Universität Leipzig*,
Bachelor Course 'Interactive Visual Data Mining'.
- 04/2020 – **Lectureship**,
09/2020 *Universität Leipzig*,
Bachelor Course 'Computergrafik'.
- 10/2019 – **Lectureship**,
03/2020 *Universität Leipzig*,
Bachelor Course 'Interactive Visual Data Mining'.
- 03/2016 – **Coordinator of the Practical Course**,
09/2016 *Universität Leipzig*,
Bachelor course 'Praktikum Objektorientierte Programmierung'.
- 10/2015 – **Teaching Assistant**,
03/2016 *Universität Leipzig*,
Bachelor course 'Modellierung und Programmierung I'.
- 10/2012 – **Student Assistant**,
02/2013 *Universität Leipzig*,
'Grundlagen der Informatik und Numerik',
Supervisor: Dr. Meiler.
- 09/2012 – **Student Assistant**,
09/2012 *Universität Leipzig*,
Remedial course 'c programming',
Supervisor: Dr. Meiler.

05/2012 – **Student Assistant**,
07/2012 *Universität Leipzig*,
'Objektorientiertes Programmieren Praktikum',
Supervisor: Dr. Meiler.

Co-Supervised PhD Students

2020 – 2023 Christofer Meinecke: Visualization of hierarchical classifier
since 2020 Michelle Philipp (née Kampfrath): Visual exploration of large trajectories of proteins
since 2018 Jeremias Schebera: Supergenome Browser
since 2018 Yves Annanias: Linkage of spatial and textual data

(Co-)Supervised Graduation Theses

2024 **Bachelor Thesis**, *Leo Haßbargen*, Integration von Sentinel Satelliten Daten in ein Web-GIS.
2024 **Bachelor Thesis**, *Florian Schulz*, Darstellung von Trajektorien von Proteinen.
2023 **Bachelor Thesis**, *Louis Franzke*, Visplorify: Interaktive visuelle Analyse des Spotify Hörverlaufs.
2023 **Bachelor Thesis**, *Lucas Zetzsche*, Visueller Vergleich von dreidimensionalen Strukturen am Beispiel von CT- und MRT-Daten.
2022 **Bachelor Thesis**, *Vincent Schmitt*, Abweichungsanalyse auf Laserscans von Gebäuden und ihren dazugehörigen polygonalen Modellen.
2022 **Bachelor Thesis**, *Erik Schulze*, segemehIQC 2.0 - A quality control tool for mapped NGS data.
2022 **Bachelor Thesis**, *Jakob Eschrich*, Alignment und Text Reuse in Musiktexten.
2022 **Bachelor Thesis**, *Nathanael Zahn*, Benchmarking von multimodalen Datensätzen aus der Wikipedia.
2022 **Bachelor Thesis**, *Jonas Lenz*, Visuelle Analyse von Bohrberichten von Tagebauen.
2022 **Bachelor Thesis**, *Jan Braker*, Prädiktoren für die Bestimmung von Temperaturabweichung zwischen ERA und Copernicus Daten.
2021 **Bachelor Thesis**, *Lorenz Heinemann*, Schätzung der Bodenreaktionskräfte beim Laufen mittels Machine Learning.
2021 **Master Thesis**, *Marc Wahsner*, Visualization of annotations in RNA secondary structures.
2020 **Bachelor Thesis**, *Jakob Pollack*, blappy - Visualization of nanopore sequencing data.
2020 **Bachelor Thesis**, *Tomas Rodolfo Daetz Chacon*, New interaction mechanisms for RNA-puzzler using VARNA.
2020 **Bachelor Thesis**, *Christoph Pfeiffer*, Dashboard zur Analyse von Unternehmensnetzwerken.
2020 **Master Thesis**, *Michael Hermelschmidt*, Interaktive Visualisierung konstruktivistischen maschinellen Lernens in Python.
2020 **Bachelor Thesis**, *Paul Starke*, Animation Authoring for Neural Quadruped Controllers.
2020 **Bachelor Thesis**, *Daniel Alker*, Visualisierung und Analyse von geographischen Carsharing-Daten.
2018 **Master Thesis**, *Yuan Peng*, Visualization of a new processing pipeline for the analysis of the evolution of tRNAs.

- 2018 **Master Thesis**, *Marcel Winter*, segemehIQC - A quality control tool for mapped NGS data.
- 2018 **Bachelor Thesis**, *Michelle Kampfrath*, Visualization of 3D tiled binned scatter plots using a virtual reality environment - TiBi-VR.
- 2017 **Bachelor Thesis**, *Dominik Michael*, Visualisierung von Chromatindaten in Virtual Reality - TiBi-VR.
- 2017 **Master Thesis**, *Daniel Alexander*, Planares Zeichnen von RNA-Sekundärstrukturen im ViennaRNA Package.
- 2017 **Bachelor Thesis**, *Matthias Haeßner*, Sierra Platinum as a Webservice.
- 2016 **Bachelor Thesis**, *Sebastian Zänker*, iDotter - An RNA Dot Plot Viewer.
- 2015 **Bachelor Thesis**, *Daniel Alexander*, Zeichnen von RNA-Sekundärstrukturen mittels Konfigurationen im Vienna RNA Package.
- 2014 **Bachelor Thesis**, *Daniel Abitz*, Analyse von Chromatin durch den K-median und das Consensus Clustering.

Scientific Services

- 2023 **Reviewer**, *EuroVis 2024 Education Papers*.
- 2023 **Committee Member**, *EuroVis Workshop VisGap 2024*.
- 2023 **Reviewer**, *EuroVis 2024*.
- 2023 **Reviewer**, *IEEE TVCG*.
- 2023 **Guest Editor**, *IEEE CG&A*, Special Issue Interactive Visualization in Applications.
- 2023 **Reviewer**, *Briefings in Bioinformatics*.
- 2023 **Online Chair**, *EuroVis 2023*.
- 2023 **Guest Editor**, *IEEE CG&A*, Special Issue on Visualization in the Wild.
- 2023 **Committee Member**, *EuroVis 2023 Posters*.
- 2023 **Committee Member**, *International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing 2023*.
- 2023 **Committee Member**, *v Workshop VisGap 2023*.
- 2023 **Reviewer**, *EuroVis 2023*.
- 2022 **Reviewer**, *Computer Graphics Forum*.
- 2022 **Organizer**, *Leipzig symposium on Visualization in Applications (LEVIA)*.
- 2022 **Committee Member**, *EuroVis 2022 Posters*.
- 2022 **Committee Member**, *International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing 2022*.
- 2022 **Committee Member**, *EuroVis Workshop VisGap 2022*.
- 2022 **Reviewer**, *WSCG 2022*.
- 2022 **Reviewer**, *IEEE VIS 2022*.
- 2022 **Reviewer**, *IEEE CG&A*.
- 2022 **Reviewer**, *IEEE TVCG*.
- 2022 **Reviewer**, *EuroVis 2022*.
- 2021 **Organizer**, *GI Workshop on Systems to Support Renaturation Projects*.
- 2021 **Reviewer**, *IEEE TVCG*.

- 2021 **Reviewer**, *IEEE CG&A*.
- 2021 **Reviewer**, *Scientific Reports*.
- 2021 **Reviewer**, *Nature Communications*.
- 2020 **Reviewer**, *IEEEVIS 2021*.
- 2020 **Comitee Member**, *EuroVis 2021 Posters*.
- 2020 **Reviewer**, *PacificVis 2021*.
- 2020 **Reviewer**, *Nature Communications*.
- 2020 **Publication Chair**, *Leipzig symposium on Visualization in Applications (LEVIA)*.
- 2020 **Comitee Member**, *EuroVis 2020 VisGap*.
- 2020 **Reviewer**, *IEEEVIS 2020*.
- 2020 **Reviewer**, *EuroVis 2020*.
- 2020 **Reviewer**, *WSCG 2020*.
- 2017 **Reviewer**, *Bioinformatics*.

Programming skills

Java, R, C, C++, and Python
 Android development, HTML, and CSS
 extensive Linux and bash skills

Qualifications

- 2023 **Prüfungsrecht**, *HD Sachsen*.
- 2023 **Kompetenzorientiert Prüfen mit unterschiedlichen Formaten**, *HD Sachsen*.
- 2020 **Modul 1 des Hochschulzertifikats**, *HD Sachsen*.
- 2019 **Fundamentals of Deep Learning for Computer Vision**, *Nvidia*.
- 2018 **Drittmittelbewirtschaftung: Wie verwalte ich Projektmittel richtig**, *Universität Leipzig*.
- 2018 **Möglichkeiten der Drittmittelförderung**, *Universität Leipzig*.
- 2018 **Der Drittmittelantrag: So hilft die Verwaltung von der Idee bis zum Bewilligungsbescheid**, *Universität Leipzig*.
- 2017 **Zusammen ins Ziel - Begleitung von wissenschaftlichen Arbeiten**, *Universität Leipzig*.
- 2016 **Basic certificate in project management**, *GPM*.

Languages

German
 English

Special Commitments

- 2013 – 2025 Member of the faculty council of Mathematics and Computer Science in Leipzig
- 2020 – 2023 Member of the appointment committee W3-Professur Large-Scale Knowledge Management
- 2020 – 2023 Member of the appointment committee W3-Professur Multimodal Machine Learning
- 2019 – 2020 Member of the appointment committee W3-Professur Grundlagen der Wissensrepräsentation

- 2018 – 2019 Member of the appointment committee W3-Professur Softwaresysteme
- 2015 Member of the appointment committee W3-Professur Schwarmintelligenz und Komplexe Systeme
- 2015 Member of the appointment committee W1-Stiftungs juniorprofessur Innovations- und wissensintensive Dienstleistungssysteme
- 2014 Member of the appointment committee W1-Professur Computational Philology
- 2014 Member of the appointment committee W3-Professur Computational Philology
- 2013 Member of the mid-term evaluation committee "W1-Professur Wissenschaftliche Visualisierung
- 2013 – 2014 Member of the student union of Computer Science in Leipzig

Leipzig, April 23, 2024 – Daniel Wiegrefe