



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
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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'.
- since 08/2018 **Project Coordinator,**
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.
- since 8/2013 **Associate,**
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

- 2021 **Application 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 **Application Paper,** *Mining Legacy Issues in Open Pit Mining sites: Innovation & Support of Renaturalization and Land Utilization,* Schröder, Bürgl, Annanias, Niekler, Müller, Wiegrefe, Bender, Mengers, Scheuermann, Heyer, ACL-IJCNLP 2021.
- 2020 **Application 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 **Application 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 **Method 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 **Application 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 **Application Paper**, *iDotter - an interactive dot plot viewer*, [Gerighausen](#), Hausdorf, Zänker, Zeckzer, WSCG 2017 - Pilsen.
- 2016 **Conference Talk**, *Analyzing Histone Modifications in iPS Cells Using Tiled Binned 3D Scatter Plots*, Zeckzer, [Gerighausen](#), Müller, BDVA 2016 - Sydney.
- 2016 **Method 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.
- 2016 **Conference Talk**, *RNApuzzler II*, 31st TBI Winterseminar in Bled(Slovenia).
- 2016 **Research 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 **Method Paper**, *Analyzing Chromatin Using Tiled Binned Scatterplot Matrices*, Zeckzer, [Gerighausen](#), Steiner, J. Prohaska, BioVis 2014 – Boston.
- 2014 **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

- 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

- 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

- since 2020 Christofer Meinecke: Visualization of hierarchical classifier
- since 2020 Michelle Kampfrath: Visual exploration of large trajectories of proteins
- since 2018 Alrik Hausdorf: Visualization of chatbots and knowledge bases
- since 2018 Nicole Hinzmann: Visual exploration of active learning classifier (on maternal leave)
- since 2018 Jeremias Schebera: Supergenome Browser
- since 2018 Yves Annanias: Linkage of spatial and textual data

(Co-)Supervised Graduation Theses

- 2021 **Bachelor Thesis**, *Jakob Eschrich*, Alignment und Text Reuse in Musiktexten, ongoing.
- 2021 **Bachelor Thesis**, *Nathanael Zahn*, Benchmarking von multimodalen Datensätzen aus der Wikipedia, ongoing.
- 2021 **Bachelor Thesis**, *Jonas Lenz*, Visuelle Analyse von Bohrberichten von Tagebauen, ongoing.
- 2021 **Bachelor Thesis**, *Jan Braker*, Prädiktoren für die Bestimmung von Temperaturabweichung zwischen ERA und Copernicus Daten, ongoing.
- 2020 **Bachelor Thesis**, *Lorenz Heinemann*, Schätzung der Bodenreaktionskräfte beim Laufen mittels Machine Learning, ongoing.
- 2020 **Master Thesis**, *Marc Wahsner*, Visualization of annotations in RNA secondary structures, ongoing.
- 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*, segemehlQC - 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

- 2020 **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 **Committee Member**, *EuroVis 2021 Posters*.
- 2020 **Reviewer**, *PacificVis 2021*.
- 2020 **Reviewer**, *Nature Communications*.
- 2020 **Publication Chair**, *Leipzig symposium on Visualization in Applications (LEVIA)*.
- 2020 **Committee 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

- 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 – 2022 Member of the faculty council of Mathematics and Computer Science in Leipzig
- 2020 – 2021 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, January 5, 2022 – Daniel Wiegrefe