Dr.-Ing. Tobias Feigl, M.Sc.

Ph.D., Friedrich-Alexander University Erlangen-Nuremberg (FAU), Germany
Research Assistant at Fraunhofer Institute for Integrated Circuits (IIS) Nuremberg, Germany
Guest Lecturer at Friedrich-Alexander University Erlangen-Nuremberg (FAU), Germany

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91466 Gerhardshofen
German citizen

Date: June 13th, 1984
Place: Nuremberg

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ABOUT

Tobias Feigl received his Ph.D. degree in Computer Science from the Friedrich-Alexander-University Erlangen-Nuremberg (FAU) in 2021 and his Masters degree from the University of Applied Sciences Erlangen-Nuremberg, Germany, in 2017. He joined the Machine Learning & Information Fusion lab at the Fraunhofer Institute for Integrated Circuits (IIS) Nuremberg, Germany, in 2017. He switched to the Hybrid Positioning & Information Fusion lab at the IIS Nuremberg, Germany, in 2020. In parallel, since 2017 he is a lecturer at the Computer Science department (Programming Systems lab) at FAU, where he gives courses on machine and deep learning.

His research interests are on AI-driven signal processing, human computer interaction, localization, and model- and data-driven hybrid filter techniques. He focuses on the improved, machine learning-driven mapping of human motion behavior in immersive virtual environments on a large scale with inertia and radio sensors.

PROFILE SUMMARY

Career	2022-today	**Senior Scientist** (Computer Science), Fraunhofer IIS Nuremberg
	2021-today	**PostDoc** (Computer Science), FAU Erlangen-Nuremberg Research Assistant (Computer Science), Fraunhofer IIS Nuremberg
	2017-2021	Graduate student, Ph.D. (Computer Science), FAU Erlangen-Nuremberg Research Assistant (Computer Science), Fraunhofer IIS Nuremberg
	2013-2017	Undergraduate student, M.Sc. (Computer Science), TH Nuremberg Graduate Assistant (Computer Science), Fraunhofer IIS Nuremberg
	2009-2013	Undergraduate student, B.Sc. (Computer Science), TH Nuremberg Working Student (Computer Science), Fraunhofer IIS Nuremberg
Research	Since 2013	AI-driven signal processing and information fusion, human computer interaction, inertia-/radio-based localization, motion models, recurrent neural networks, model- and data-driven hybrid information filters, machine learning-driven social signal processing and brain-computer interfaces, motion / gait analysis, dimensionality reduction, 3*GPP* standardization (AI/ML Rel-17/18)
Publications	Since 2017	Conference papers: 22, Journal articles: 6, Book chapter: 1, Patents: 21
Talks	Since 2017	Conferences: 16, Invites/Keynotes: 3, Poster presentations: 3
Services	Since 2017	Member of review committees: 27×, Session chair: 2×
Teaching	Since 2017	Courses at FAU: 19, with a strong focus on applied AI and information fusion, scientific presentation and writing; Bachelor theses: 9, Master theses: 10
Funding	Since 2016	Submitted applications as co-applicant: 17; Successful applications thereof: 6
Consulting	Since 2013	Industry projects finished: 12, Running: 3

EDUCATION

29.09.2021	**Ph.D., Computer Science**
	Friedrich-Alexander-University Erlangen-Nuremberg, Germany
	Computer Science Department
Thesis	"Data-driven methods for determining position and orientation in radio- and inertial-based dead reckoning systems"
Focus	Long-short-term memory cells to improve pedestrian dead reckoning and recurrent neural networks for orientation and localization
Advisors	Prof. Dr. Michael Philippsen, PD Dr.-Ing. habil. Thomas Wittenberg, Prof. Dr. Georg Fischer, and Prof. Dr. Klaus Meyer-Wegener
Grades	Thesis: 1.0 (summa cum laude) *
31.01.2017	**M.Sc., Computer Science**
	University of Applied Science Erlangen-Nuremberg, Germany
	Computer Science Department
Thesis	"Immersion-optimized sensor fusion for low-cost real-time locating systems in Virtual Reality applications"
Focus	Digital Signal-Processing and Machine Learning to improve Augmented and Virtual Reality and Pedestrian Localization
Advisors	Prof. Dr. Timo Götzelmann and Prof. Dr. Friedhelm Stappert
Grades	Thesis: 1.0 (A, GPA 4.0), total: 1.4 (A, GPA 3.6) *
06.06.2013	**B.Sc., Computer Science**
	University of Applied Science, Erlangen-Nuremberg, Germany
	Computer Science Department
Thesis	"Conceptual design and implementation of a system configuration tool for a radio-based localization system"
Advisors	Prof. Dr. rer. nat. Friedhelm Stappert
Grades	Thesis: 1.0 (A, GPA 4.0), total: 2.3 (A, GPA 2.7) *
12.07.2006	**German High School Diploma**
	Erlangen, Germany
Focus	Math, Physics, Chemistry, and Computer Science
Grades	Total: 3.7 (D+, GPA 1.3) *

* Grades range from 1.0 to 4.0, with 1.0 is best and from level A to E, with A is best 10%, B is next 25% and GPA 4.0 to 1.0 with 4.0 is best

ACADEMIC POSITIONS

2021–today	**PostDoc, Computer Science, Ph.D.** Friedrich-Alexander-University Erlangen-Nuremberg, Germany Computer Science Department - Programming Systems Group
Project	"Generalization of AI-based Localization Methods"
Advisors	Prof. Dr. Michael Philippsen, PD Dr.-Ing. habil. Thomas Wittenberg, and Prof. Dr.-Ing. habil. Andreas Paul Fröba.
2017–2021	**Research Assistant (Ph.D. candidate), Computer Science, M.Sc.** Friedrich-Alexander-University (FAU) Erlangen-Nuremberg, Germany Computer Science Department - Programming Systems Group
Project	"RuNN - Recurrent Neuronal Networks (RNNs) for Real-Time Estimation of Nonlinear Motion Models"
Advisors	Prof. Dr. Michael Philippsen
2015	**Research Intern, Computer Science, B.Sc.** University of Applied Sciences (TH) in Nuremberg, Germany, Reverse Engineering Lab
Project	"Development and publication of the first mobile anti-phishing device for smartphone-based online banking"
Advisor	Prof. Dr. Peter Trommler
2013-2015	**Visiting Student, Computer Science, B.Sc.** Friedrich-Alexander-University Erlangen-Nuremberg, Germany Computer Science Department
Focus	Machine Learning, Human-Computer-Interaction, Computer Graphics, Reverse Engineering
2007-2009	**Visiting Student, Electrical Engineering and Information Technology** University of Applied Science in Erlangen-Nuremberg, Germany Electrical Engineering Department
Focus	Signal processing, Embedded systems, Hardware reverse engineering

TEACHING EXPERIENCE

Employment Times (teaching load†):

Start	End	Institute	Position	Lecture Type	SWS in hours/%
01.10.2017	31.03.2018	Friedrich-Alexander-University Erlangen-Nuremberg (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	Computer Science	5 / 13
01.04.2018	30.09.2018	Friedrich-Alexander-University Erlangen-Nuremberg (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	Computer Science	3 / 8
01.10.2018	30.09.2019	Friedrich-Alexander-University Erlangen-Nuremberg (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	Computer Science	3 / 8
01.10.2019	30.09.2020	Friedrich-Alexander-University Erlangen-Nuremberg (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	Computer Science	4 / 10
01.10.2020	31.03.2021	Friedrich-Alexander-University Erlangen-Nuremberg (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	Computer Science	4 / 10
01.10.2021	31.03.2022	Friedrich-Alexander-University Erlangen-Nuremberg (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	Computer Science	4 / 10

† Teaching load differs officially per year and per summer/winter semester cycle. However, the actual load/work per course does not differ as the structure and flow of the courses do not change.

Interruption Times:

Start	End	Type of employment interruption:
01.04.2021	30.09.2021	Summer break; full-time employment at Fraunhofer IIS Nuremberg, and finalizing my dissertation

Courses

For the two courses CS3856999 (Machine Learning - Introduction) and CS3856998 (Machine Learning - Advances), about 15 participants are preselected every semester from all applicants (about 100 on average) from the courses: study in business computer science, computer science, electrical engineering and computer science, medical technology and applied mathematics.

2022 **Lecturer (course instructor)**
Load Total hours/week: 4
Courses CS3856999 Machine Learning: Introduction (B.Sc. students [5 ECTS]), FAU.
CS3856998 Machine Learning: Advances (M.Sc. students [5 ECTS]), FAU.

2021 **Lecturer (course instructor)**
Load Total hours/week: 4
Courses CS3856999 Machine Learning: Introduction (B.Sc. students [5 ECTS]), FAU.
CS3856998 Machine Learning: Advances (M.Sc. students [5 ECTS]), FAU.
CS3448533 Parallel and Functional Programming, [Supervision only], FAU.
CS3448488 Algorithms and Data Structures, [Supervision only], FAU.

2020 **Lecturer (course instructor)**
Load Total hours/week: 4
Courses CS3856999 Machine Learning: Introduction (B.Sc., students [5 ECTS]), FAU.
CS3856998 Machine Learning: Advances (M.Sc. students [5 ECTS]), FAU.
CS3448533 Parallel and Functional Programming, [Supervision only], FAU.
CS3448488 Algorithms and Data Structures, [Supervision only], FAU.

2019	**Lecturer (course instructor)**
Load	Total hours/week: 3
Courses	CS3856998 Machine Learning course (B.Sc., M.Sc., students [5 ECTS]), FAU. CS3448533 Parallel and Functional Programming, [Supervision only], FAU. CS3448488 Algorithms and Data Structures, [Supervision only], FAU.
2018	**Supervisor**
Load	Total hours/week: 3
Courses	CS3856998 Machine Learning course (B.Sc., M.Sc., students [2.5, 5 ECTS]), FAU. CS3448533 Parallel and Functional Programming, FAU. CS3448488 Algorithms and Data Structures, FAU.
2017	**Supervisor**
Load	Total hours/week: 5
Courses	CS3856998 Machine Learning course (B.Sc., M.Sc., students [2.5, 5 ECTS]), FAU. CS3448533 Parallel and Functional Programming, FAU. CS3448488 Algorithms and Data Structures, FAU.

Qualification Theses

[1] Novelty and Anomaly Detection in Multivariate Time Series of Sparse and Dirty NLP Signals
Hannes Rupprecht
Masters Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2022, running.

[2] Interpretability of Distribution Shifts in Multivariate Time Series of Sparse and Dirty NLP Signals
Gabriela Simoni
Bachelor Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2022, running.

[3] Multivariate Time Series Compression of Dirty Signals to Enable Embedded AI
Thorben Wegner
Bachelor Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2022, running.

[4] Multivariate Time Series Classification of Jammers in GNSS Signals
Tobias Brieger
Masters Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2022, running.

[5] Einfluss verschiedener Inertial- und Funksensordaten auf die Posenschätzung von Menschen mittels Rekurrenter Neuronaler Netze
Andreas Porada
Masters Thesis, Technische Hochschule Nürnberg (TH), 2021, published.

[6] Radio Localization to Enable Robust People Tracking in High-Resolution Images
Stephanie Mehltretter
Bachelor Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2020, published.

[7] Einfluss verschiedener Inertial- und Funksensordaten auf die Posenschätzung von Menschen mittels Rekurrenter Neuronaler Netze
Peter Bauer
Masters Thesis, Technische Hochschule Nürnberg (TH), 2020, published.

[8] Application of Deep Learning Methods to Process Natural Phenomena
Thomas Altstidl
Bachelor Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2019, published.

[9] Feature Extraction of a Radio Frequency based Localization System Using Beta-VAE
Oskar Herrmann
Bachelor Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2019, published.

[10] How far is far? Evaluation, Visualization, and Interpretation of RNNs on Physically Correct Movements
Lukas Schmidt
Masters Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2019, published.

[11] Komplementieren Relativer und Absoluter Eigenlokalisierungsverfahren
Felix Ott

Masters Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2019, published.

[12] Avatar Synchronisation zur Analyse von Bewegungswahrnehmung der unteren Extremitäten in VR
Lisa Gruner
Bachelor Thesis, Technische Hochschule Nürnberg (TH), 2019, published.

[13] Eine explorative Untersuchung zu Textverständnis und Lerneffekt im Medium Virtuelle Realität - Lohnt sich der Implementierungsaufwand für die Anwendung im Fraunhofer IIS?
Lea Otte
Bachelor Thesis, Technische Hochschule Nürnberg (TH), 2019, published.

[14] Evaluation of Distributed Neural Networks for Indoor Radio Positioning Utilizing Efficient Embedded Hardware
Jan Niklas Bauer
Masters Thesis, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), 2019, published.

[15] Analyse und Evaluierung aktueller MR Tracking Systeme am Beispiel ARKit
Andreas Porada
Bachelor Thesis, Georg-Simon-Ohm Hochschule Nürnberg (GSOHM), 2018, published.

[16] Einfluss dynamischer Objekttransformationen auf die Bewegungswahrnehmung in VR
Felix Gruber
Bachelor Thesis, Technische Hochschule Nürnberg (TH), 2018, published.

[17] Robustes Inside-Out Tracking für großflächige Mehrnutzer VR Systeme
Christian Daxer
Masters Thesis, Technische Hochschule Nürnberg (TH), 2018, published.

[18] Robuste Posenschätzung durch Identifikation von Kalibriermomenten mittels Maschine Learning
Frank Brendel
Masters Thesis, Technische Hochschule Nürnberg (TH), 2018, published.

[19] Virtual-Reality-optimierte Sensor Fusion für eine langzeitstabile Gestenerkennung der oberen Extremität
Christian Jakob
Masters Thesis, Technische Hochschule Nürnberg (TH), 2018, published.

INDUSTRIAL POSITIONS

2021–today	**Postdoctoral Research Assistant, Ph.D.** Fraunhofer Institute for Integrated Circuits (IIS) Nuremberg, Germany Hybrid Positioning and Information Fusion Group Full-time (100%)
Tasks	Administer research and industry projects with strong focus on AI-based localization
2017–2021	**Research Assistant, M.Sc.** Fraunhofer IIS in Nuremberg, Germany Machine Learning and Information Fusion Group Full-time (20-80%)
Tasks	Administer research and industry projects with strong focus on AI-based signal processing
2015	**Co-Founder, B.Sc.** HolodeckVR GmbH (Spree), Nuremberg, Germany Part-time (50%)
Tasks	Data-analytic and development of an immersive low-cost tracking system for virtual reality applications
2009-2017	**Working Student** Fraunhofer IIS in Nuremberg, Germany Precise Localization and Analytics Department Part-time (50%)
Tasks	Software development, design of graphical user interfaces, hardware engineering
2001	**Working Scholar** Weilburger Graphics GmbH, Gerhardshofen, Germany Leading manufacturer in the international graphic industry Vacation job
Tasks	Office job
2000-2009	**Working Scholar** RWG Germany GmbH, Dachsbach, Germany Leading manufacturer in the international aviation industry Vacation job
Tasks	Optimization of sandblasting procedures

INTERNSHIP

2005 **Computer scientist** [6 months] at WiTrack - Radio localization dept. & Technische Hochschule - Computer science dept., Nuremberg, Germany

2003 **Engineer** [6 months] at Staatliche Fachoberschule und Berufsoberschule - Electrical engineering dept., Erlangen, Germany

2003 **Engineer** [6 months] at Staatliche Fachoberschule und Berufsoberschule - Materials technology dept., Erlangen, Germany

2001 **Technical consultant** [3 months] at McDonald's Corporation, Neustadt a.d. Aisch, Germany

2001 **Nanny** [1 month] at Kinderwelt - Kindergarten, after-school care & crèche, Gerhardshofen, Germany

HONORS AND AWARDS

2021 **Award** (1st place): *"Fraunhofer IIS-Preis des LZE e.V. 2021 für herausragende wissenschaftliche Leistung"* [15.12.2021, Leistungszentrum Elektroniksysteme, LZE GmbH]

Research Grant: *"Anerkennung der besonderen Leistung"* [27.11.2021, Fraunhofer IIS]

2020 **Nomination** (1st place): Schmidt Science Fellows 2021 [24.08.2020, Fraunhofer]

Research Grant: *"Anerkennung der besonderen Leistung im Rahmen von Drittmittelprojekten."* [16.11.2020, FAU]

2019 **Award** (3rd place, Grade: 1.07): *"Top seminar of the year"* [FAU]

Research Grant: *"Anerkennung der besonderen Leistung im Rahmen von Drittmittelprojekten. Pionierleistungen im Bereich des Positions- und Orientierungstrackings für Virtual-Reality-Systeme in Verknüpfung mit Methoden des maschinellen Lernens; Stärkung der Wettbewerbsstellung der Friedrich-Alexander-Universität und maßgeblicher Beitrag zur Wissenschaftlichkeit in diesem Bereich"* [30.09.2019, FAU]

2018 **Research Grant**: *"Anerkennung der besonderen Leistung"* [28.10.2018, Fraunhofer IIS]

2017 **Award** (1st place): *"Auszeichnung für besondere Studienleistung in der Informatik - Herausragende Masterarbeit"* [17.11.2017, Technische Hochschule Nuremberg]

2006 **Award** (2nd place): *"Auf den Spuren des bayerischen Handwerks - Erinnerungszeichen 2005/2006"* [14.03.2006, Bayerisches Staatsministerium für Unterricht und Kultus]

ACADEMIC SERVICE

2022 **Member of**

Review Committee, IEEE Vehicular Technology Conference (VTC-Spring).
European working group, Fraunhofer IIS (intern).
Competence lead - Sequence-based Learning, ADA Center, Bavaria, Germany.

2021 **Member of**

European working group, Fraunhofer IIS (intern).
Review Committee, Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN).
Competence lead - Sequence-based Learning, ADA Center, Bavaria, Germany.
Review Committee, Intl. Symp. on Mixed and Augmented Reality (ISMAR).
Review Committee, Intl. Conf. on Virtual Reality and 3D User Interface (IEEE VR).
Review Committee, MDPI Sensors Journal (MDPI).
Session Chair, Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN).
Review Committee, Wireless Communications and Networking Conference (WCNC).

2020 **Member of Review Committee**

Intl. Symp. on Mixed and Augmented Reality (ISMAR).
Competence lead - Sequence-based Learning, ADA Center, Bavaria, Germany.
Springer Journal on Virtual Reality (VIRE).
IEEE Sensors Journal (IEEE).
Intl. Conf. on Virtual Reality and 3D User Interface (IEEE VR).
Conf. on Artificial Intelligence (AAAI).
IEEE Transactions on Signal Processing (IEEE TSP).
MDPI Sensors Journal (MDPI).
Conf. on Neural Information Processing Systems (NeurIPS).

2019 **Member of Review Committee**

Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN).
Intl. Conf. of Human-Computer Interaction (CHI).
European Conf. on Artificial Intelligence (ECAI).
Intl. Conf. on Virtual Reality and 3D User Interface (IEEE VR).

2018 **Member of Review Committee**

Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN).
Virtual Reality Software and Technology (VRST).
Intl. Symp. on Mixed and Augmented Reality (ISMAR).

2017 **Member of Review Committee**

Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN).
Special Interest Group on Graphics and Interactive Techniques (SIGGRAPH).
Intl. Conf. on Virtual Reality and 3D User Interface (IEEE VR).

ACADEMIC PUBLICATIONS

Articles in Double-blind Peer-reviewed Journals

[1] PDRNN: Data-driven Pedestrian Dead Reckoning on Loosely Coupled Radio- and Inertial-Signalstreams
Tobias Feigl, Schmidt Lukas, Bauer Peter, Ott Felix, Michael Philippsen, Christopher Mutschler
IEEE Sensors Journal (Jan. 2022) 1–22. (submitted).

[2] Datengetriebene Methoden zur Bestimmung von Position und Orientierung in funk- und trägheitsbasierter Koppelnavigation
Tobias Feigl
Friedrich-Alexander-Universität Erlangen-Nürnberg (Sept. 2021). DOI: https://nbn-resolving.org/urn:nbn:de:bvb:29-opus4-173550.

[3] Estimating TOA Reliability with Variational Autoencoders
Maximilian Stahlke, Sebastian Kram, Felix Ott, Tobias Feigl, Christopher Mutschler
IEEE Sensors Journal (Sept. 2021) pp. 1–6. DOI: https://doi.org/10.1109/JSEN.2021.3101933.

[4] RNN-aided Human Velocity Estimation from a Single IMU
Tobias Feigl, Sebastian Kram, Philipp Woller, Ramiz H. Siddiqui, Michael Philippsen, Christopher Mutschler
Sensors J. 13.4512 (May 2020) pp. 1–31. DOI: 10.3390/s20133656.

[5] UWB Channel Impulse Responses for Positioning in Complex Environments: A Detailed Feature Analysis
Sebastian Kram, Maximilian Stahlke, Tobias Feigl, Jochen Seitz, Jörn Thielecke
Sensors J. 24.5547 (Dec. 2019) pp. 1–26. DOI: 10.3390/s19245547.

[6] Sick Moves! Motion Parameters as Indicators of Simulator Sickness
Tobias Feigl, Daniel Roth, Stefan Gradl, Markus Wirth, Marc Erich Latoschik, Björn Eskofier, Michael Philippsen, Christopher Mutschler
Trans. on Visualization and Computer Graphics (TVCG) 25.11 (Aug. 2019) pp. 3146–3157. DOI: 10.1109/TVCG.2019.2932224.

Articles in Double-blind Peer-reviewed Conferences

[1] Delay Estimation in Dense Multipath Environments using Time Series Segmentation
Sebastian Kram, Christopher Kraus, Maximilian Stahlke, Tobias Feigl, Jörn Thielecke, Christopher Mutschler
IEEE Wireless Communications and Networking Conference (WCNC), 2022, Austin, TX.

[2] Transfer Learning to adapt 5G AI-based Fingerprint Localization across Environments
Maximilian Stahlke, Tobias Feigl, Mario H. Castaneda Garcia, Richard A. Stirling-Gallacher, Jochen Seitz, Christopher Mutschler
IEEE Vehicular Technology Conference (VTC-Spring), 2022, Helsinki, Finland. (submitted).

[3] Accuracy-Aware Compression of Channel Impulse Responses using Deep Learning
Thomas Robert Altstidl, Sebastian Kram, Oskar Herrmann, Maximilian Stahlke, Tobias Feigl, Christopher Mutschler
Proc. Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), 2021, Lloret de Mar, Spain, DOI: https://doi.org/10.1109/IPIN51156.2021.9662545.

[4] Robust ToA-Estimation using Convolutional Neural Networks on Randomized Channel Models
Tobias Feigl, Ernst Eberlein, Sebastian Kram, Christopher Mutschler
Proc. Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), 2021, Lloret de Mar, Spain, DOI: https://doi.org/10.1109/IPIN51156.2021.9662625.

[5] Contact Tracing with the Exposure Notification Framework in the German Corona-Warn-App
Steffen Meyer, Thomas Windisch, Adrian Perl, Daniel Dzibela, Robert Marzilger, Nicolas Witt, Justus Benzler, Göran Kirchner, Tobias Feigl, Christopher Mutschler
Proc. Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), 2021, Lloret de Mar, Spain, DOI: https://doi.org/10.1109/IPIN51156.2021.9662591.

[6] Real-Time Gait Reconstruction For Virtual Reality Using a Single Sensor
Tobias Feigl, Lisa Gruner, Christopher Mutschler, Daniel Roth
Proc. Intl. Symp. on Mixed Reality and Augmented Reality (ISMAR), 2020, Pernambuco, Brasil, DOI: 10.1109/ISMAR-Adjunct51615.2020.00037.

[7] A Sense of Quality for Augmented Reality Assisted Process Guidance
Anes Redzepagic, Christoffer Löfler, Tobias Feigl, Christopher Mutschler
Proc. Intl. Symp. on Mixed Reality and Augmented Reality (ISMAR), 2020, Pernambuco, Brasil, DOI: 10.1109/ISMAR-Adjunct51615.2020.00046.

[8] ViPR: Visual-Odometry-aided Pose Regression for 6DoF Camera Localization
Felix Ott, Tobias Feigl, Christoffer Löfler, Christopher Mutschler
Proc. Intl. Conf. on Computer Vision and Patter Recognition (CVPR), 2020, Seattle, Washington, DOI: 10.1109/CVPRW50498.2020.00029.

[9] Localization Limitations of ARCore, ARKit, and Hololens in Dynamic Large-Scale Industry Environments
Tobias Feigl, Andreas Porada, Steve Steiner, Christoffer Löffler, Christopher Mutschler, Michael Philippsen
Proc. Intl. Conf. on Computer Vision, Imaging and Computer Graphics Theory and Applications (GRAPP), 2020, Valletta, Malta, DOI: 10.5220/0008989903070318.

[10] ViPR: Visual-Odometry-aided Pose Regression for 6DoF Camera Localization
Felix Ott, Tobias Feigl, Christoffer Löffler, Christopher Mutschler
arXiv 1912.08263 cs.CV, 2019.

[11] A Bidirectional LSTM for Estimating Dynamic Human Velocities from a Single IMU
Tobias Feigl, Sebastian Kram, Philipp Woller, Ramiz H. Siddiqui, Michael Philippsen, Christopher Mutschler
Proc. Intl. Conf. Indoor Positioning and Indoor Navigation (IPIN), 2019, Pisa, Italy, DOI: 10.1109/IPIN.2019.8911814.

[12] A Social Interaction Interface Supporting Affective Augmentation Based on Neuronal Data
Daniel Roth, Larrissa Brübach, Franziska Westermeier, Christian Schell, Tobias Feigl, Marc Erich Latoschik
Proc. Symp. on Spatial User Interaction (SUI), 2019, New Orleans, USA, DOI: 10.1145/3357251.3360018.

[13] A Framework for Location-Based VR Applications
Jean-Luc Lugrin, Florian Kern, Constantin Kleinbeck, Daniel Roth, Christian Daxer, Tobias Feigl, Christopher Mutschler, Marc Erich Latoschik
Virtuelle und Erweiterte Realitat: 16. Workshop der GI-Fachgruppe VR/AR (Berichte aus der Informatik), 2019, Fulda, Germany.

[14] Brain 2 Communicate: EEG-based Affect Recognition to Augment Virtual Social Interactions
Daniel Roth, Franziska Westermeier, Larissa Brübach, Tobias Feigl, Christian Schell, Marc Erich Latoschik
Mensch und Computer - Workshopband, 2019, Hamburg, Germany, DOI: 10.18420/muc2019-ws-571.

[15] Supervised Learning for Yaw Orientation Estimation
Tobias Feigl, Christopher Mutschler, Michael Philippsen
Proc. Intl. Conf. Indoor Positioning and Indoor Navigation (IPIN), 2018, Nantes, France, DOI: 10.1109/IPIN.2018.8533811.

[16] Recurrent Neural Networks on Drifting Time-of-Flight Measurements
Tobias Feigl, Thorsten Nowak, Michael Philippsen, Thorsten Edelhäußer, Christopher Mutschler
Proc. Intl. Conf. Indoor Positioning and Indoor Navigation (IPIN), 2018, Nantes, France, DOI: 10.1109/IPIN.2018.8533813.

[17] A Location-Based VR Museum
Jean-Luc Lugrin, Florian Kern, Ruben Schmidt, Constantin Kleinbeck, Daniel Roth, Christian Daxer, Tobias Feigl, Christopher Mutschler, Marc Erich Latoschik
Proc. Intl. Conf. Virtual Worlds for Serious Applications (VS-Games), 2018, Würzburg, Germany, DOI: 10.1109/VS-Games.2018.8493404.

[18] Head-to-Body-Pose Classification in No-Pose VR Tracking Systems
Tobias Feigl, Christopher Mutschler, Michael Philippsen
Proc. Intl. Conf. Virtual Reality and 3D User Interfaces (IEEE VR), 2018, Tuebingen/Reutlingen, Germany, DOI: 10.1109/VR.2018.8446495.

[19] Human Compensation Strategies for Orientation Drifts
Tobias Feigl, Christopher Mutschler, Michael Philippsen
Proc. Intl. Conf. Virtual Reality and 3D User Interfaces (IEEE VR), 2018, Tuebingen/Reutlingen, Germany, DOI: 10.1109/VR.2018.8446300.

[20] Beyond Replication: Augmenting Social Behaviors in Multi-User Social Virtual Realities
Daniel Roth, Constantin Kleinbeck, Tobias Feigl, Christopher Mutschler, Marc-Erich Latoschik
Proc. Conf. Virtual Reality and 3D User Interfaces (IEEE VR), 2018, Tuebingen/Reutlingen, Germany, DOI: 10.1109/VR.2018.8447550.

[21] Acoustical manipulation for redirected walking
Tobias Feigl, Eliise Kõre, Christopher Mutschler, Michael Philippsen
Proc. Intl. Symp. on Virtual Reality Software and Technology (VRST), 2017, Gothenburg, Sweden, DOI: 10.1145/3139131.3141205.

[22] Social Augmentations in Multi-User Virtual Reality: A Virtual Museum Experience
Daniel Roth, Constantin Kleinbeck, Tobias Feigl, Christopher Mutschler, Marc-Erich Latoschik
Proc. Intl. Symp. on Mixed and Augmented Reality (ISMAR), 2017, Nantes, France, DOI: 10.1109/ISMAR-Adjunct.2017.28.

Patents

[1] Methods and Apparatuses for Positioning in a Wireless Communications Network
Mohammad Alawieh, Ernst Eberlein, Tobias Feigl, Thomas Grün
WO/2021/089258, Patent Cooperation Treaty, 2021, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2021089258.

[2] Methods and Apparatuses for Positioning in a Wireless Communications Network
Mohammad Alawieh, Ernst Eberlein, Tobias Feigl, Thomas Grün
EP3819657, European Patent Office, 2021, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=EP323759835.

[3] Method to Determine a Present Position of an Object, Positioning System, Tracker and Computer Program
Stephan Otto, Tobias Feigl, Christian Daxer, Alexander Bruckmann, Christoffer Loeffler, Christopher Mutschler, Marc Faßbinder
US20200371226, United States of America Patent Office, 2020, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=US311580591.

[4] Method for Predicting a Motion of an Object, Method for Calibrating a Motion Model, Method for Deriving a Predefined Quantity and Method for Generating a Virtual Reality View
Tobias Feigl, Christopher Mutschler
EP3732549, European Patent Office, 2020, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=EP310552140.

[5] Method to Determine a Present Position of an Object, Positioning System, Tracker and Computer Program
Stephan Otto, Tobias Feigl, Christian Daxer, Alexander Bruckmann, Christoffer Loeffler, Christopher Mutschler, Marc Faßbinder
EP3724744, European Patent Office, 2020, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=EP309422132.

[6] Method for Predicting a Motion of an Object, Method for Calibrating a Motion Model, Method for Deriving a Predefined Quantity and Method for Generating a Virtual Reality View
Tobias Feigl, Christopher Mutschler
US20200334837, United States of America Patent Office, 2020, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=US309415935.

[7] Method to Determine a Present Position of an Object, Positioning System, Tracker and Computer Program
Stephan Otto, Tobias Feigl, Christian Daxer, Alexander Bruckmann, Christoffer Loeffler, Christopher Mutschler, Marc Faßbinder
CN111512269, Chinese Patent Office, 2020, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=CN302932485.

[8] Method for Predicting a Motion of an Object, Method for Calibrating a Motion Model, Method for Deriving a Predefined Quantity and Method for Generating a Virtual Reality View
Tobias Feigl, Christopher Mutschler
CN111527465, Chinese Patent Office, 2020, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=CN302978646.

[9] Apparatuses and Methods for Correcting Orientation Information from one or more Inertial Sensors
Tobias Feigl, Christopher Mutschler
US20190346280, United States of America Patent Office, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=US276400006.

[10] Apparatuses and Methods for Correcting Orientation Information from one or more Inertial Sensors
Tobias Feigl, Christopher Mutschler

EP3568801, European Patent Office, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=EP276893927.

[11] Vorrichtung und Verfahren zur Effizienten Zustandsbestimmung und Lokalisierung zwischen mobilen Plattformen
Christopher Mutschler, Sebastian Kram, Christian Nickel, Tobias Feigl Seitz, Niels Hadaschik
WO/2019/197006, Patent Cooperation Treaty, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2019197006.

[12] Apparatuses and Methods for Correcting Orientation Information from one or more Inertial Sensors
Tobias Feigl, Christopher Mutschler
CN250178436, Chinese Patent Office, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=CN250178436.

[13] Method for Predicting a Motion of an Object, Method for Calibrating a Motion Model, Method for Deriving a Predefined Quantity and Method for Generating a Virtual Reality View
Tobias Feigl, Christopher Mutschler
WO/2019/129355, Patent Cooperation Treaty, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2019129355.

[14] Method for Setting a Viewing Direction in a Representation of a Virtual Environment
Christopher Mutschler, Tobias Feigl, Christian Daxer, Stephan Otto, Bercea Cosmin-Ionut
US243321209, United States of America Patent Office, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=US243321209.

[15] Method to Determine a Present Position of an Object, Positioning System, Tracker and Computer Program
Stephan Otto, Tobias Feigl, Christian Daxer, Alexander Bruckmann, Christoffer Loeffler, Christopher Mutschler, Marc Faßbinder
WO/2019/114925, Patent Cooperation Treaty, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2019114925.

[16] Method for Setting a Viewing Direction in a Representation of a Virtual Environment
Christopher Mutschler, Tobias Feigl, Christian Daxer, Stephan Otto, Bercea Cosmin-Ionut
EP3458935, European Patent Office, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=EP239836478.

[17] Method for Setting a Viewing Direction in a Representation of a Virtual Environment
Christopher Mutschler, Tobias Feigl, Christian Daxer, Stephan Otto, Bercea Cosmin-Ionut
CN237677091, Chinese Patent Office, 2019, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=CN237677091.

[18] Vorrichtung und Verfahren zur Effizienten Zustandsbestimmung und Lokalisierung zwischen mobilen Plattformen
Tobias Feigl, Christopher Mutschler
DE223815006, Deutsches Patent- und Markenamt (DPMA), 2018, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=DE223815006.

[19] Apparatuses and Methods for Correcting Orientation Information from one or more Inertial Sensors
Tobias Feigl, Christopher Mutschler
WO/2018/130446, Patent Cooperation Treaty, 2018, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2018130446.

[20] Verfahren zum Einstellen einer Blickrichtung in einer Darstellung einer virtuellen Umgebung
Christopher Mutschler, Tobias Feigl, Christian Daxer, Stephan Otto, Bercea Cosmin-Ionut
DE206581508, Deutsches Patent- und Markenamt (DPMA), 2017, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=DE206581508.

[21] Method for Setting a Viewing Direction in a Representation of a Virtual Environment
Christopher Mutschler, Tobias Feigl, Christian Daxer, Stephan Otto, Bercea Cosmin-Ionut
WO/2017/198441, Patent Cooperation Treaty, 2017, URL: https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2017198441.

ACADEMIC TALKS

2021

Machine Learning for Indoor Localization: Special Session
Tobias Feigl et al.
Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), Lloret de Mar, France.

Machine Learning for Sensor Fusion: Special Session
Tobias Feigl et al.
Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), Lloret de Mar, France.

Robust ToA-Estimation using Convolutional Neural Networks on Randomized Channel Models
Tobias Feigl et al.
Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), Lloret de Mar, France.

Datengetriebene Methoden zur Bestimmung von Position und Orientierung in funk- und trägheitsbasierter Koppelnavigation
Tobias Feigl et al.
Friedrich-Alexander-Universität (FAU), Erlangen, Germany.

2020

Real-Time Gait Reconstruction For Virtual Reality Using a Single Sensor
Tobias Feigl et al.
Symp. on Mixed and Augmented Reality (ISMAR), Pernambuco, Brasil.

A Sense of Quality for Augmented Reality Assisted Process Guidance
Tobias Feigl et al.
Symp. on Mixed and Augmented Reality (ISMAR), Pernambuco, Brasil.

Localization Limitations of ARCore, ARKit, and Hololens in Dynamic Large-Scale Industry Environments
Tobias Feigl et al.
Intl. Conf. on Computer Graphics Theory and Applications, Valletta, Malta.

2019

Machine learning for positioning
Tobias Feigl et al.
Symp. on Big Data Allianz, Stuttgart, Germany.

Sick Moves! Motion Parameters as Indicators of Simulator Sickness
Tobias Feigl et al.
Intl. Symp. on Mixed and Augmented Reality (ISMAR), Beijing, China.

Challenges of data-driven Localization
Tobias Feigl et al.
ADA Lovelace Center for Analytics, Data and Applications, Nuremberg, Germany.

A Bidirectional LSTM for Estimating Dynamic Human Velocities from a Single IMU
Tobias Feigl et al.
Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), Pisa, Italy.

Generative models for the detection of destructive radio environments
Tobias Feigl et al.
Intl. Symp. on Horizon 2020 - ICT-52, Valencia, Spain.

2018 **Human Compensation Strategies for Orientation Drifts**
Tobias Feigl et al.
Intl. Conf. on Virtual Reality and 3D User Interfaces (IEEE VR), Tuebingen/Reutlingen, Germany.

Head-to-Body-Pose Classification in No-Pose VR Tracking Systems
Tobias Feigl et al.
Intl. Conf. on Virtual Reality and 3D User Interfaces (IEEE VR), Tuebingen/Reutlingen, Germany.

Recurrent Neural Networks on Drifting Time-of-Flight Measurements
Tobias Feigl et al.
Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), Nantes, France.

Supervised Learning for Yaw Orientation Estimation
Tobias Feigl et al.
Intl. Conf. on Indoor Positioning and Indoor Navigation (IPIN), Nantes, France.

Machine learning methods for human-centered multi-sensory localization
Tobias Feigl et al.
Workshop on Machine Learning, Bilkent University, Ankara, Turkey.

2017 **Hacking human sensors - Augmented Reality, Mixed Reality, Virtual Reality optimized visualization**
Tobias Feigl et al.
Eingebettete Systeme für Sport, Fitness und Gesundheit (ESI), Nuremberg, Germany.

Acoustical manipulation for redirected walking
Tobias Feigl et al.
Intl. Symp. on Virtual Reality Software and Technology (VRST), Gothenburg, Sweden.

SKILLS AND INTERESTS

Skills

Coding

+10 years objective-C/C/C++/C#, MATLAB, Qt, boost C++, OpenCV, IDA disassembler, java/script, batch, bash/shell, iOS, macOS, unix (Ubuntu), ..

+5 years Python, scikit-learn, TensorFlow, PyTorch, Theano, Keras, ROS, Unity3D, Unreal Engine, Android, JDK, NDK, swift, IDA/Ghidra/Hopper disassembler, arduino, assembler (x86, arm32, arm64, amd64, x86_64), OCaml, ruby, coq, Haskell, Lua, php, perl, ..

git /OSS (+100k loc) eyeTVCamd, OSCam, iDirStat, ..

Languages

German	Native speaker;	Latin	Independent user, B2;
English	Proficient user, C2;	Spanish	Basic user, A1.

Interests

#Professional Time- and context-sensitive algorithms, support vector machines, recurrent and convolutional neural networks, variational autoencoder, human-computer-interaction, social-interaction and -behavior, virtual- and augmented-reality, simulator sickness, sensor fusion, digital signal processing, localization, and positioning.

#Private Family and friends, music, nutrition, and fitness/cardio sports.

RELEVANT QUALIFICATIONS (Certificates)

2018 **Basic qualification** in "Lead meetings successfully" at Training+Beratung
Host: Hailka Proske, Erlangen, Germany

2017 **Basic qualification** in "Work methodology" at Training+Beratung
Host: Hailka Proske, Erlangen, Germany

2016 **Basic qualification** in "Time management and work methodology" at Training+Beratung
Host: Hailka Proske, Erlangen, Germany

INTERNATIONAL EXPERIENCE

2017-2022 **Invited speaker (selection)** at international conferences and symposia in, e.g., Nantes France, Pisa / Rome Italy, Gothenburg Sweden, Pernambuco Brazil, Lloret de Mar / Valencia Spain, Valetta Malta

2019 **Visiting researcher [2 weeks]** at SenseTime - Research Lab for AI+Health (Host: Prof. Dr. Hongsheng Li), Workshop on AI-based Gait Analysis, Beijing, China

2017 **Guest lecturer [2 weeks]** at Electrical and Electronics Engineering Dept. (Host: Prof. Dr. Sinan Gezici) and Computer Engineering Dept. (Host: Prof. Dr. Hamdi Dibeklioğlu), Workshop on Machine Learning, Bilkent University, Ankara Turkey

1996-1997 **Exchange student [11 months]** at Bexhill High Academy, Bexhill-on-sea, United Kingdom

MEMBERSHIP

Since 2016 Verein Deutscher Ingenieure (VDI)
Graduate Student Member, Institute of Electrical and Electronics Engineers (IEEE)
Graduate Student Member, Association for Computing Machinery (ACM)

CIVIL SERVICE

2006–2007 **Community Service**
Blaukreuz Haus Rauschenberg in Dachsbach, Germany
Tasks Supervision of the IT infrastructure; driver assistant for hospital trips

THESES

2021 **Data-driven methods for determining position and orientation in radio- and inertial-based dead reckoning systems**
Tobias Feigl
Ph.D. Thesis, Friedrich-Alexander-University Erlangen-Nuremberg, Germany
ADVISOR Prof. Dr. Michael Philippsen

2017 **Immersion-optimized sensor fusion for low-cost real-time locating systems in Virtual Reality applications**
Tobias Feigl
Masters Thesis, University of Applied Science Erlangen-Nuremberg, Germany
ADVISOR Prof. Dr. Timo Götzelmann

2013 **Conceptual design and implementation of a system configuration tool for a radio-based localization system**
Tobias Feigl
Bachelor Thesis, University of Applied Science Erlangen-Nuremberg, Germany
ADVISOR Prof. Dr. rer. nat. Friedhelm Stappert

2011 **Analysis of a radio system configuration framework**
Tobias Feigl
Studienarbeit, University of Applied Science Erlangen-Nuremberg, Germany
ADVISOR Prof. Dr. Reinhard Eck

CURRICULUM VITAE (DAY-TO-DAY)

Complete curriculum vitae (employment to the exact day, scope of work - full-time or part-time in %).

SCHOOL CAREER

30.09.2021 - today	**Postdoctoral Researcher** (Dr.-Ing.), Computer Science Department - Programming Systems Group, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany
01.04.2021 - 29.09.2021	**Research Assistant** (M.Sc.), Computer Science Department - Programming Systems Group, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany
01.10.2017 - 31.03.2021	**Doctorate** (M.Sc.), Computer Science Department - Programming Systems Group, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany
01.10.2015 - 31.07.2017	**Student** (M.Sc.), Computer Science Department, University of Applied Science (TH), Nuremberg, Germany
01.09.2013 - 21.07.2015	**Student** (B.Sc.), Computer Science Department, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany
01.10.2009 - 31.07.2013	**Student** (B.Sc.), Computer Science Department, University of Applied Science (TH), Nuremberg, Germany
01.10.2007 - 31.07.2009	**Student**, Electrical Engineering and Information Technology, University of Applied Science (TH), Nuremberg, Germany
01.09.2003 - 01.07.2006	**Secondary school**, High School Diploma, Staatliche Fachoberschule, Erlangen, Germany
01.09.2001 - 01.07.2003	**Secondary school**, Landschulheim Gymnasium (LSH), Wiesentheid, Germany
01.09.1995 - 01.07.2001	**Secondary school**, Friedrich-Alexander Gymnasium (FAG), Neustadt a.d. Aisch, Germany
01.09.1991 - 01.07.1995	**Primary school**, Dachsbach, Germany

CIVILIAN SERVICE

01.10.2006 - 01.06.2007	**Civilian Service**, Blaukreuz - Haus, Rauschenberg, Germany, Full-time

SCIENTIFIC CAREER

30.09.2021 - 31.03.2023	**Postdoctoral Researcher, Computer Science** (Ph.D.), Programming Systems Department, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany, Part-time (4 SWS, 20%)
01.10.2018 - 31.03.2021	**Research Assistant, Computer Science** (M.Sc.), Programming Systems Department,

	Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany, Full-time (80%)
01.04.2018 - 30.09.2018	**Research Assistant, Computer Science** (M.Sc.), Programming Systems Department, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany, Full-time (60%)
01.10.2017 - 31.03.2018	**Research Assistant, Computer Science** (M.Sc.), Programming Systems Department, Friedrich-Alexander-University (FAU), Erlangen-Nuremberg, Germany, Full-time (100%)
13.07.2015 - 24.10.2015	**Research Assistant, Computer Science** (B.Sc.), Computer Systems Department, University of Applied Science (TH), Nuremberg, Germany, Part-time (30%)

PROFESSIONAL CAREER

30.09.2021 - 31.03.2023	**Postdoctoral Research Assistant** (Ph.D.), Hybrid Positioning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.04.2021 - 29.09.2021	**Research Assistant** (M.Sc.), Hybrid Positioning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.10.2018 - 31.03.2021	**Research Assistant** (M.Sc.), Machine Learning and Information Fusion Group & Hybrid Positioning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (20%)
01.04.2018 - 30.09.2018	**Research Assistant** (M.Sc.), Machine Learning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (40%)
01.10.2017 - 31.03.2018	**Research Assistant** (M.Sc.), Machine Learning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Access Contract (0%)
01.08.2017 - 30.09.2017	**Research Assistant** (M.Sc.), Machine Learning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.03.2017 - 31.07.2017	**Research Assistant** (M.Sc.), Precise Localization and Analytics Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.10.2016 - 28.02.2017	**Graduate Assistant** (B.Sc.), Precise Localization and Analytics Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
01.11.2015 - 30.09.2016	**Graduate Assistant** (B.Sc.), Machine Learning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
01.10.2015 - 31.10.2015	**Graduate Assistant** (B.Sc.), Machine Learning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (45%)
01.08.2015 - 30.09.2015	**Graduate Assistant** (B.Sc.),

	Machine Learning and Information Fusion Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.01.2015 - 31.07.2015	**Graduate Assistant** (B.Sc.), Positioning in Wireless Networks Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
01.05.2014 - 31.12.2014	**Graduate Assistant** (B.Sc.), Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
04.11.2013 - 31.04.2014	**Graduate Assistant** (B.Sc.), Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (38%)
06.06.2013 - 03.11.2013	**Graduate Assistant** (B.Sc.), Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.05.2013 - 05.06.2013	**Working Student**, Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (100%)
01.04.2013 - 30.04.2013	**Working Student**, Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
01.11.2012 - 31.03.2013	**Working Student**, Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
01.09.2012 - 31.10.2012	**Working Student**, Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
01.02.2012 - 31.08.2012	**Working Student**, Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (25%)
01.09.2011 - 31.01.2012	**Working Student**, Laufzeitbasierte Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Full-time (100%)
01.08.2011 - 31.08.2011	**Working Student**, Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (6%)
15.03.2011 - 31.07.2011	**Working Student**, Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (25%)
01.01.2011 - 14.03.2011	**Working Student**, Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (38%)

01.11.2010 - 31.12.2010	**Working Student**, Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (18%)
01.08.2010 - 31.10.2010	**Working Student**, Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (51%)
15.05.2010 - 31.07.2010	**Working Student**, Funkortung Group, Fraunhofer Institute for Integrated Circuits (IIS), Nuremberg, Germany, Part-time (25%)
27.07.2001 - 15.09.2001	**Working Scholar**, Weilburger Graphics GmbH, Gerhardshofen, Germany, Full-time (vacation job)
2000 - 2009	**Working Scholar**, RWG Germany GmbH, Dachsbach, Germany, Full-time (vacation job)

EXPERIENCE SINCE GRADUATION, B.Sc.

Start	End	Employer	Position	Time in %
06.06.2013	03.11.2013	Fraunhofer (IIS) Laufzeitbasierte Funkortung	Graduate Assistant (B.Sc., FHMA)	100
04.11.2013	30.04.2014	Fraunhofer (IIS) Laufzeitbasierte Funkortung	Graduate Assistant (B.Sc., FHMA)	38
01.05.2014	31.12.2014	Fraunhofer (IIS) Laufzeitbasierte Funkortung	Graduate Assistant (B.Sc., FHMA)	51
01.01.2015	31.07.2015	Fraunhofer (IIS) Positioning in Wireless Networks	Graduate Assistant (B.Sc., FHMA)	51
13.07.2015	24.10.2015	Technische Hochschule Nürnberg (TH) Computer Science Dept. (IN)	Graduate Assistant (B.Sc., FHMA)	30
01.08.2015	30.09.2015	Fraunhofer (IIS) Machine Learning & Information Fusion	Graduate Assistant (B.Sc., FHMA)	100
01.10.2015	31.10.2015	Fraunhofer (IIS) Machine Learning & Information Fusion	Graduate Assistant (B.Sc., FHMA)	45
01.11.2015	30.09.2016	Fraunhofer (IIS) Machine Learning & Information Fusion	Graduate Assistant (B.Sc., FHMA)	51
01.10.2016	28.02.2017	Fraunhofer (IIS) Präzise Lokalisierung und Analytics	Research Assistant (B.Sc., FHMA)	51
01.03.2017	31.07.2017	Fraunhofer (IIS) Präzise Lokalisierung und Analytics	Research Assistant (M.Sc., HSMA)	100
01.08.2017	30.09.2017	Fraunhofer (IIS) Machine Learning & Information Fusion	Research Assistant (M.Sc., EG13)	100
01.10.2017	31.03.2018	Fraunhofer (IIS) Machine Learning & Information Fusion	Research Assistant (M.Sc., EG13)	0
		Friedrich-Alexander-University (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	20
01.04.2018	30.09.2018	Fraunhofer (IIS) Machine Learning & Information Fusion	Research Assistant (M.Sc., EG13)	40
		Friedrich-Alexander-University (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	60
01.10.2018	31.03.2021	Fraunhofer (IIS) Machine Learning & Information Fusion	Research Assistant (M.Sc., EG13)	20
		Friedrich-Alexander-University (FAU) Programming Systems	Research Assistant (M.Sc., EG13)	80
01.04.2021	31.03.2023	Fraunhofer (IIS) Hybrid Positioning & Information Fusion	Research Assistant (Ph.D., EG13)	100

TEACHING EVALUATION

Please note that in the following, the red profile line represents the result of the evaluation, while the blue profile line represents the results of all evaluations of all courses at the "Technische Fakultät" at Friedrich-Alexander-University (FAU). To ensure a balanced and fair assessment, the courses were partially supported by additional examiners/assessors. Note that, for the years 2017/2018 and 2018/2019, other course leaders C. Mutschler and N. Witt were registered, but they played a passive role.

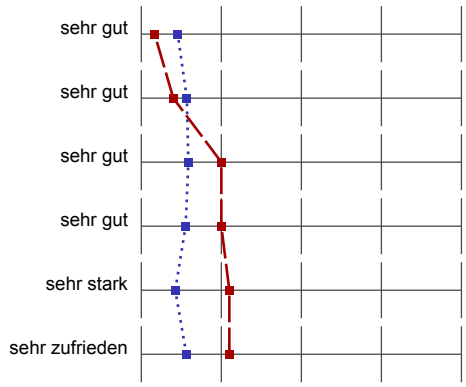
Profillinie

Teilbereich: Technische Fakultät (TF)
Name der/des Lehrenden: Dr.-Ing. Christopher Mutschler
Titel der Lehrveranstaltung: (Name der Umfrage) Machine Learning (17w-Inf2-SEM-ML)

Vergleichslinie: Mittelwert_aller_Seminar_Rückläufer_WS1718

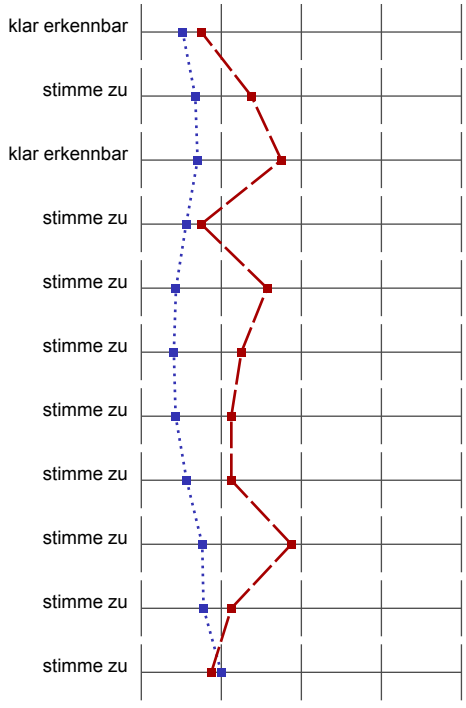
Verwendete Werte in der Profillinie: Mittelwert

3. Hauptfragen zu Lehrveranstaltung, Betreuerinnen und Betreuern



		links	rechts		
3.1)	►► Das Seminar entspricht den im Modulhandbuch eingetragenen Inhalten und Kompetenzen.	sehr gut	mangelhaft	n=6 n=123	mw=1,17 mw=1,46
3.2)	►► Wie ist die Einpassung in den Studienverlauf Ihres Studienganges?	sehr gut	mangelhaft	n=10 n=160	mw=1,40 mw=1,57
3.3)	►► Wie ist das Seminar selbst strukturiert?	sehr gut	mangelhaft	n=10 n=165	mw=2,00 mw=1,59
3.4)	►► Wie ist das Seminar inhaltlich und organisatorisch mit den zugehörigen Lehrveranstaltungen abgestimmt?	sehr gut	mangelhaft	n=3 n=103	mw=2,00 mw=1,55
3.5)	►► Die Betreuerinnen und Betreuer wirken engagiert und motiviert bei der Durchführung des Seminars.	sehr stark	überhaupt nicht	n=10 n=165	mw=2,10 mw=1,42
3.6)	►► Wie zufrieden sind Sie insgesamt mit dem Seminar:	sehr zufrieden	unzufrieden	n=10 n=165	mw=2,10 mw=1,56

5. Weitere Fragen zu Lehrveranstaltung, Betreuerinnen und Betreuern



		links	rechts		
5.2)	Zielsetzungen und Schwerpunkte des Seminarinhalts sind:	klar erkennbar	nicht erkennbar	n=8 n=91	mw=1,75 mw=1,52
5.3)	Die allgemeine Einführung in das Seminar ist völlig ausreichend.	stimme zu	stimme nicht zu	n=8 n=89	mw=2,38 mw=1,67
5.4)	Die formalen Anforderungen und die Erwartungen der Betreuerinnen und Betreuer sind:	klar erkennbar	nicht erkennbar	n=8 n=91	mw=2,75 mw=1,70
5.5)	Die Themenauswahl ist gut durchdacht.	stimme zu	stimme nicht zu	n=8 n=91	mw=1,75 mw=1,56
5.6)	Die Betreuerinnen und Betreuer erscheinen gut vorbereitet.	stimme zu	stimme nicht zu	n=7 n=90	mw=2,57 mw=1,43
5.7)	Die Betreuerinnen und Betreuer schaffen eine angenehme Arbeitsatmosphäre.	stimme zu	stimme nicht zu	n=8 n=91	mw=2,25 mw=1,41
5.8)	Die Unterstützung durch die Betreuerinnen und Betreuer ist angemessen.	stimme zu	stimme nicht zu	n=8 n=91	mw=2,13 mw=1,43
5.9)	Die Betreuerinnen und Betreuer geben nützliche Hinweise (Literatur, Herangehensweise, Ausführung).	stimme zu	stimme nicht zu	n=8 n=90	mw=2,13 mw=1,57
5.10)	Die technische Unterstützung für den Vortrag (Rhetorik-Einführung, Muster für Folien, etc.) ist gut.	stimme zu	stimme nicht zu	n=8 n=88	mw=2,88 mw=1,76
5.11)	Es gibt eine rege Beteiligung an der Diskussion.	stimme zu	stimme nicht zu	n=8 n=90	mw=2,13 mw=1,78
5.12)	Das Verhältnis zwischen Lernerfolg und Zeitaufwand ist gut.	stimme zu	stimme nicht zu	n=8 n=91	mw=1,88 mw=2,00

6. Schwierigkeitsgrad und Aufwand

		links	rechts		
6.3)	Meinen zeitlichen Gesamtaufwand für dieses Seminar finde ich:	eher zu niedrig	eher zu hoch	n=8 n=88	mw=3,13 mw=3,51

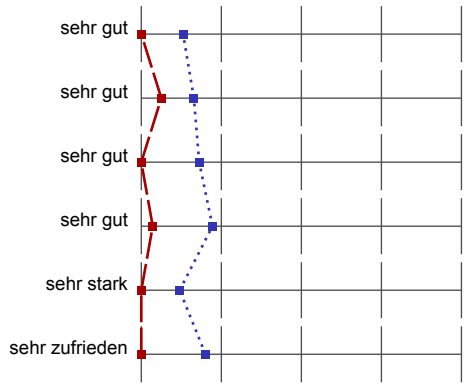
Profillinie

Teilbereich: Technische Fakultät (TF)
Name der/des Lehrenden: Dipl.-Ing. Nicolas Witt
Titel der Lehrveranstaltung: (Name der Umfrage) Machine Learning

Vergleichslinie: Mittelwert_aller_Seminar_Rückläufer_WS'18/19

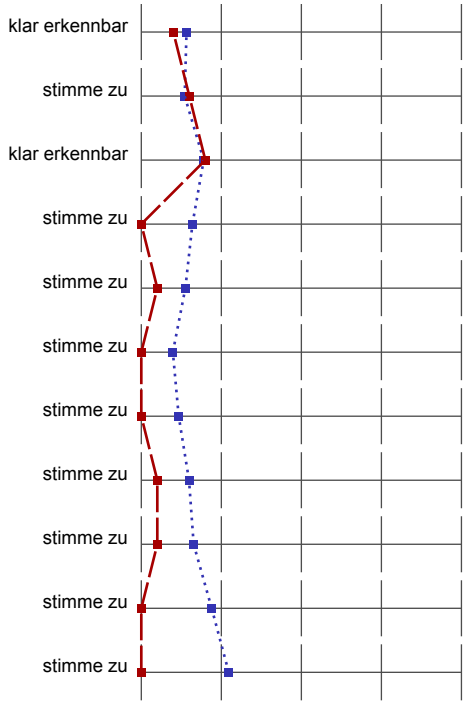
Verwendete Werte in der Profillinie: Mittelwert

3. Hauptfragen zu Lehrveranstaltung, Betreuerinnen und Betreuern



3.1)	►► Das Seminar entspricht den im Modulhandbuch eingetragenen Inhalten und Kompetenzen.	sehr gut	mangelhaft	n=6 n=174	mw=1,00 mw=1,52
3.2)	►► Wie ist die Einpassung in den Studienverlauf Ihres Studienganges?	sehr gut	mangelhaft	n=8 n=201	mw=1,25 mw=1,66
3.3)	►► Wie ist das Seminar selbst strukturiert?	sehr gut	mangelhaft	n=8 n=217	mw=1,00 mw=1,72
3.4)	►► Wie ist das Seminar inhaltlich und organisatorisch mit den zugehörigen Lehrveranstaltungen abgestimmt?	sehr gut	mangelhaft	n=7 n=163	mw=1,14 mw=1,89
3.5)	►► Die Betreuerinnen und Betreuer wirken engagiert und motiviert bei der Durchführung des Seminars.	sehr stark	überhaupt nicht	n=8 n=217	mw=1,00 mw=1,48
3.6)	►► Wie zufrieden sind Sie insgesamt mit dem Seminar:	sehr zufrieden	unzufrieden	n=8 n=217	mw=1,00 mw=1,80

5. Weitere Fragen zu Lehrveranstaltung, Betreuerinnen und Betreuern



5.2)	Zielsetzungen und Schwerpunkte des Seminarinhalts sind:	klar erkennbar	nicht erkennbar	n=5 n=108	mw=1,40 mw=1,56
5.3)	Die allgemeine Einführung in das Seminar ist völlig ausreichend.	stimme zu	stimme nicht zu	n=5 n=107	mw=1,60 mw=1,54
5.4)	Die formalen Anforderungen und die Erwartungen der Betreuerinnen und Betreuer sind:	klar erkennbar	nicht erkennbar	n=5 n=109	mw=1,80 mw=1,78
5.5)	Die Themenauswahl ist gut durchdacht.	stimme zu	stimme nicht zu	n=5 n=108	mw=1,00 mw=1,64
5.6)	Die Betreuerinnen und Betreuer erscheinen gut vorbereitet.	stimme zu	stimme nicht zu	n=5 n=109	mw=1,20 mw=1,55
5.7)	Die Betreuerinnen und Betreuer schaffen eine angenehme Arbeitsatmosphäre.	stimme zu	stimme nicht zu	n=5 n=109	mw=1,00 mw=1,39
5.8)	Die Unterstützung durch die Betreuerinnen und Betreuer ist angemessen.	stimme zu	stimme nicht zu	n=5 n=107	mw=1,00 mw=1,47
5.9)	Die Betreuerinnen und Betreuer geben nützliche Hinweise (Literatur, Herangehensweise, Ausführung).	stimme zu	stimme nicht zu	n=5 n=109	mw=1,20 mw=1,60
5.10)	Die technische Unterstützung für den Vortrag (Rhetorik-Einführung, Muster für Folien, etc.) ist gut.	stimme zu	stimme nicht zu	n=5 n=107	mw=1,20 mw=1,65
5.11)	Es gibt eine rege Beteiligung an der Diskussion.	stimme zu	stimme nicht zu	n=5 n=108	mw=1,00 mw=1,88
5.12)	Das Verhältnis zwischen Lernerfolg und Zeitaufwand ist gut.	stimme zu	stimme nicht zu	n=5 n=108	mw=1,00 mw=2,09

6. Schwierigkeitsgrad und Aufwand

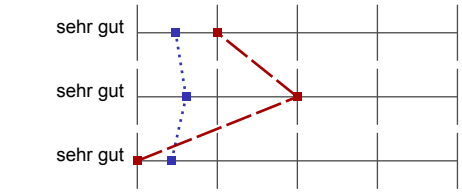
6.3)	Meinen zeitlichen Gesamtaufwand für dieses Seminar finde ich:	eher zu niedrig	eher zu hoch	n=5 n=102	mw=3,00 mw=3,38

Profillinie

Teilbereich: TF • Virtual-Class-Umfragen • WS 20/21
Name der/des Lehrenden: M. Sc. Tobias Feigl
Titel der Lehrveranstaltung: (Name der Umfrage) Machine Learning: Introduction
Vergleichslinie: WS-20/21_Mittelwerte-für-Seminare

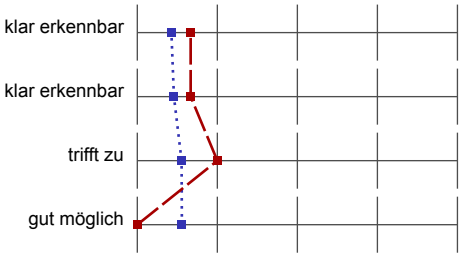
Verwendete Werte in der Profillinie: Mittelwert

3. Organisation, Inhalte und Kompetenzen der Lehrveranstaltung



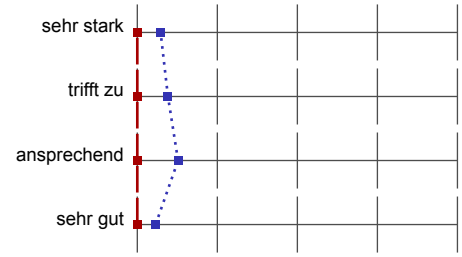
3.1)	Wie gut war die Durchführung der (virtuellen) LV organisiert?	n=3 n=240	mw=2,00 mw=1,48
3.2)	Wie gut war die LV inhaltlich organisiert und mit evtl. zugehörigen LVen abgestimmt? (Vorl. • Übg. • Prakt. • . . .)	n=1 n=174	mw=3,00 mw=1,61
3.3)	Die LV entspricht den im Modulhandbuch eingetragenen Inhalten und Kompetenzen.	n=3 n=229	mw=1,00 mw=1,43

4. Struktur der Lehrveranstaltung



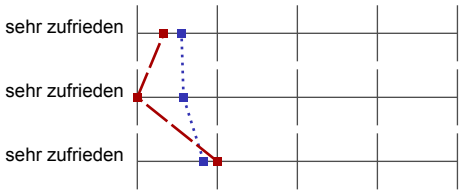
4.1)	Zielsetzungen und Schwerpunkte des Inhalts waren:	n=3 n=237	mw=1,67 mw=1,43
4.2)	Der rote Faden der LV (synchron bzw. asynchron) war:	n=3 n=236	mw=1,67 mw=1,46
4.3)	Der dargebotene Stoff war nachvollziehbar, es war genügend Zeit zum Mitdenken vorhanden.	n=3 n=235	mw=2,00 mw=1,55
4.4)	Mit den Medien, Begleitmaterialien, Literaturhinweisen und Hinweisen in der LV selbst waren Vor- und Nachbereitung:	n=2 n=228	mw=1,00 mw=1,56

5. Durchführung der Lehrveranstaltung



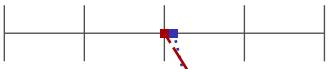
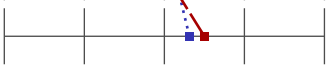
5.1)	Die Dozentin/Der Dozent wirkte engagiert und motiviert bei der (virtuellen) Durchführung.	n=3 n=237	mw=1,00 mw=1,29
5.2)	Die Dozentin/Der Dozent förderte das Interesse am Themenbereich.	n=2 n=235	mw=1,00 mw=1,38
5.3)	Der Präsentationsstil der Dozentin/des Dozenten war:	n=1 n=216	mw=1,00 mw=1,51
5.4)	Die Dozentin/Der Dozent ging auf Fragen und Belange der Studierenden ein (synchron und asynchron).	n=3 n=236	mw=1,00 mw=1,23

6. Zufriedenheit und Kompetenzerwerb



6.1)	Wie zufrieden sind Sie insgesamt mit der LV?	n=3 n=239	mw=1,33 mw=1,55
6.2)	Wie zufrieden sind Sie mit der LV bezüglich Ihres eigenen Kompetenzerwerbs?	n=3 n=239	mw=1,00 mw=1,58
6.3)	Wie zufrieden sind Sie mit dem Verha ltnis zwischen Lernerfolg/Kompetenzerwerb und eigenem Zeitaufwand?	n=2 n=235	mw=2,00 mw=1,83

7. Zusätzliche Informationen für die Dozentin/den Dozenten

7.1)	Der Schwierigkeitsgrad des Stoffes ist:	eher zu niedrig		eher zu hoch	n=2 mw=3,00 n=236 mw=3,12
7.3)	Meinen zeitlichen Durchschnittsaufwand für diese LV fand ich:	eher zu niedrig		eher zu hoch	n=2 mw=3,50 n=230 mw=3,31

Profillinie für Indikatoren

Teilbereich:	TF • Virtual-Class-Umfragen • WS 20/21
Name der/des Lehrenden:	M. Sc. Tobias Feigl
Titel der Lehrveranstaltung: (Name der Umfrage)	Machine Learning: Introduction
Vergleichslinie:	WS-20/21_Mittelwerte-für-Seminare

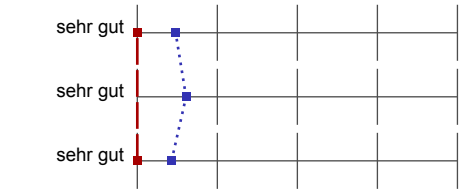
Indikator • Organisation, Inhalte und Kompetenzen der LV (Kap. 3)	1 — 5	mw=1,71 mw=1,50	s=0,00 s=0,80
Indikator • Struktur der LV (Kap. 4)	1 — 5	mw=1,64 mw=1,50	s=0,68 s=0,75
Indikator • Durchführung der LV (Kap. 5)	1 — 5	mw=1,00 mw=1,35	s=0,00 s=0,65
Indikator • Zufriedenheit und Kompetenzerwerb (Kap. 6)	1 — 5	mw=1,38 mw=1,65	s=0,19 s=0,93

Profillinie

Teilbereich: TF • Virtual-Class-Umfragen • WS 20/21
Name der/des Lehrenden: M. Sc. Tobias Feigl
Titel der Lehrveranstaltung: (Name der Umfrage) Machine Learning: Advances
Vergleichslinie: WS-20/21_Mittelwerte-für-Seminare

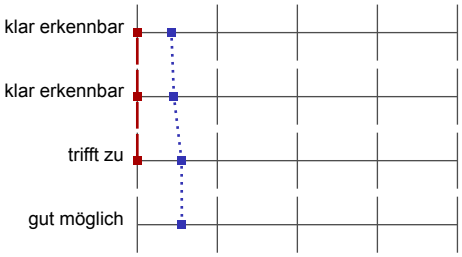
Verwendete Werte in der Profillinie: Mittelwert

3. Organisation, Inhalte und Kompetenzen der Lehrveranstaltung



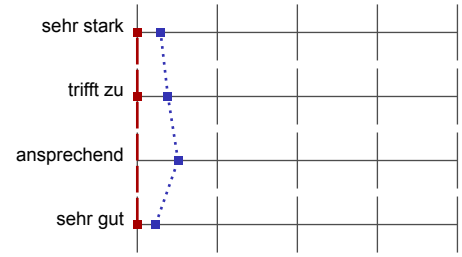
3.1)	Wie gut war die Durchführung der (virtuellen) LV organisiert?	n=1 n=240	mw=1,00 mw=1,48
3.2)	Wie gut war die LV inhaltlich organisiert und mit evtl. zugehörigen LVen abgestimmt? (Vorl. • Übg. • Prakt. • . . .) (*)	n=174	mw=1,61
3.3)	Die LV entspricht den im Modulhandbuch eingetragenen Inhalten und Kompetenzen.	n=1 n=229	mw=1,00 mw=1,43

4. Struktur der Lehrveranstaltung



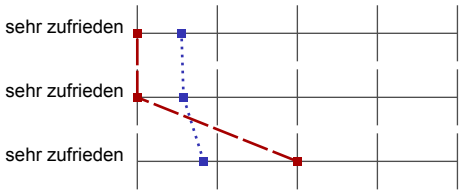
4.1)	Zielsetzungen und Schwerpunkte des Inhalts waren:	n=1 n=237	mw=1,00 mw=1,43
4.2)	Der rote Faden der LV (synchron bzw. asynchron) war:	n=1 n=236	mw=1,00 mw=1,46
4.3)	Der dargebotene Stoff war nachvollziehbar, es war genügend Zeit zum Mitdenken vorhanden.	n=1 n=235	mw=1,00 mw=1,55
4.4)	Mit den Medien, Begleitmaterialien, Literaturhinweisen und Hinweisen in der LV selbst waren Vor- und Nachbereitung: (*)	n=228	mw=1,56

5. Durchführung der Lehrveranstaltung



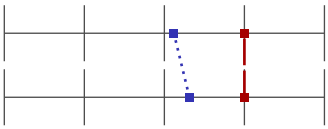
5.1)	Die Dozentin/Der Dozent wirkte engagiert und motiviert bei der (virtuellen) Durchführung.	n=1 n=237	mw=1,00 mw=1,29
5.2)	Die Dozentin/Der Dozent förderte das Interesse am Themenbereich.	n=1 n=235	mw=1,00 mw=1,38
5.3)	Der Präsentationsstil der Dozentin/des Dozenten war: (*)	n=216	mw=1,51
5.4)	Die Dozentin/Der Dozent ging auf Fragen und Belange der Studierenden ein (synchron und asynchron).	n=1 n=236	mw=1,00 mw=1,23

6. Zufriedenheit und Kompetenzerwerb



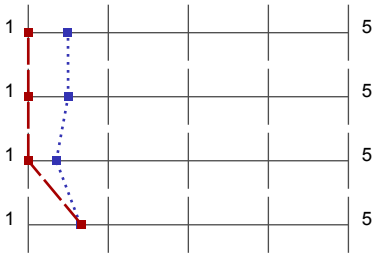
6.1)	Wie zufrieden sind Sie insgesamt mit der LV?	n=1 n=239	mw=1,00 mw=1,55
6.2)	Wie zufrieden sind Sie mit der LV bezüglich Ihres eigenen Kompetenzerwerbs?	n=1 n=239	mw=1,00 mw=1,58
6.3)	Wie zufrieden sind Sie mit dem Verha ltnis zwischen Lernerfolg/Kompetenzerwerb und eigenem Zeitaufwand?	n=1 n=235	mw=3,00 mw=1,83

7. Zusätzliche Informationen für die Dozentin/den Dozenten

7.1)	Der Schwierigkeitsgrad des Stoffes ist:	eher zu niedrig		eher zu hoch	n=1 mw=4,00 n=236 mw=3,12
7.3)	Meinen zeitlichen Durchschnittsaufwand für diese LV fand ich:	eher zu niedrig		eher zu hoch	n=1 mw=4,00 n=230 mw=3,31

Profillinie für Indikatoren

Teilbereich:	TF • Virtual-Class-Umfragen • WS 20/21
Name der/des Lehrenden:	M. Sc. Tobias Feigl
Titel der Lehrveranstaltung: (Name der Umfrage)	Machine Learning: Advances
Vergleichslinie:	WS-20/21_Mittelwerte-für-Seminare



Indikator • Organisation, Inhalte und Kompetenzen der LV (Kap. 3)	mw=1,00 mw=1,50	s=0,00 s=0,80
Indikator • Struktur der LV (Kap. 4)	mw=1,00 mw=1,50	s=0,00 s=0,75
Indikator • Durchführung der LV (Kap. 5)	mw=1,00 mw=1,35	s=0,00 s=0,65
Indikator • Zufriedenheit und Kompetenzerwerb (Kap. 6)	mw=1,67 mw=1,65	s=0,00 s=0,93