Dr.-Ing. Christoph Kinkeldey

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Professional Experience

since 1/2021 — Freelance lecturer on postgraduate level (e.g. data visualization workshops)
Guest lecturer at HafenCity University Hamburg

06/2020 –12/2020 — Postdoc (research)
Cluster of Excellence "Matters of Activity"
Freie Universität Berlin

12/2018 –12/2020 — Postdoc (research and teaching)
Human-Centered Computing
Freie Universität Berlin

02/2018 –11/2018 — Freelance GIS and cartography expert
nextdoor.com, Inc., San Francisco

05/2016 –01/2018 — Postdoc (research)
AVIZ research group
Inria Paris-Saclay

04/2015 –04/2016 — Freelance software developer (open data portal)
Climate Change Centre Austria, Vienna

10/2014 –03/2015 — External lecturer
Master programme Geomatics
HafenCity University Hamburg

08/2008 –07/2014 — Research and teaching assistant
Lab for Geoinformatics and Geovisualization
HafenCity University Hamburg

08/2004 –07/2008 — Software developer (web cartography, remote sensing)
Delphi IMM GmbH, Potsdam

01/2004 –07/2004 — Freelance software devloper (visualization, remote sensing)
Berlin, Hanover

Research Projects

2018 –2020 IKON–Visualizing research projects and knowledege transfer at a research museum (in cooperation with Museum of Natural History Berlin) (funded by BMBF Germany) Link
My role: Development team lead of interactive visualization tool incl. natural language processing
Visual Analytics // Machine Learning // Uncertainty Visualization

2016 –2018 BitConduite–Visual analysis of user activity in the Bitcoin network (funded by ANR France) Link
My role: Development of interactive visualization tool incl. clustering
Visual Analytics // Big Data // Machine Learning

2011 –2013 KLIWAS–Impact of climate change on waterways and navigation (funded by BMVBS Germany) Link
My role: Development of uncertainty visualization for detection of foreland vegetation from remotely sensed data
Uncertainty Visualization // GIS Tool Development

2008 –2011 CLAIM–Classification assessment incorporating uncertainty (funded by DFG Germany) Link
My role: Concept and implementation of a method for evaluation of classification quality under consideration of uncertainties
Uncertainty Modeling // GIS Tool Development // Remote Sensing

2006 –2008 GMES–Global Monitoring for Environment and Security, today: Copernicus
My role: Quality assessment of land cover products from SPOT satellite data
GIS Tool Development // Remote Sensing

2004 –2006 eConstruction–Object Recognition in Satellite Imagery
My role: Entwicklung und Implementierung eines neuen Verfahrens zur objektorientierten Analyse von Satellitendaten
Method Development for Object Recognition // Remote Sensing // Tool Development

Teaching

Winter 2021/22	BSc course “Geodata management” (concept, online lecture and online tutorial) *HafenCity University Hamburg*
2020-22	BSc course “Geodata analysis” (concept, online lecture and online tutorial) *HafenCity University Hamburg*
10/2020	MSc block course “Data Visualization” (concept, lecture and tutorial) *Freie Universität Berlin*
2019/20	Participation in didactic education program “SUPPORT für die Lehre” *Freie Universität Berlin*
WiSe 2019/20	MSc course “Data Visualization” (part of lecture, tutorial) *Freie Universität Berlin*
2017/18	MSc course “Visual Analytics” (guest lectures ans tutorial) *École Centrale Paris (ECP)*
WiSe 2014/15	MSc course “Software Technology” (concept, lecture, tutorial) *HafenCity University Hamburg*
03/14	ERASMUS course “GIS Programming” (concept, lecture, tutorial) *Universidad Politécnica de Madrid (UPM)*
SoSe 2012 SoSe 2013	MSc course “GIS Programming” (concept, lecture, tutorial) *HafenCity University Hamburg*
2012-14	MSc course “Data modeling and analysis” (concept, lecture, tutorial) *HafenCity University Hamburg*

Thesis Supervision

Topics from visual data analysis and machine learning, e.g.,
BSc „Result-driven Interactive Visual Support of Parameter Selection for Dimensionality Reduction” [Link]
BSc „PreCall: A Visual Interface for Threshold Optimization in Machine Learning Model Selection” [Link]
BSc „Animated Transitions for Visualization of Change in Clustering Results” [Link]
BSc „Animated Transitions to Support Visualization of Missing Data” [Link]

Education

12/2010 –11/2015 PhD (Dr.-Ing.) in Geoinformatics
HafenCity University Hamburg
Grade: magna cum laude ("very good"), Link

10/1997 –12/2003 Dipl.-Ing. (MSc) Computer Science in Civil Engineering
Leibniz University Hannover
Thesis "Terrain modelling in space and time"
Grade: 1,3 ("very good")

Research Stays

05-08 2015 *Department of Infrastructure Engineering, University of Melbourne, Australia*
Collaboration with M. Duckham and L. Cheong: User study assessing the impact of different visualizations on decision making under risk

08-11 2012 *GeoVISTA Center, PennState University, USA*
Collaboration with A. MacEachren, A. Klippel, J. Mason und D. Retchless: Evaluation methodolology for uncertainty visualization

Scholarships and Awards

2015 Henry Johns Award for best paper of the year in "The Cartographic Journal"

2015 Taylor & Francis Computer Science Social Media Award

2015 DAAD grant (postdoc) for research stay at the University of Melbourne, Australia (three months)

2012 DAAD grant (PhD student) for research stay at the Pennsylvania State University, USA (three months)

2010 NSF (National Science Foundation) travel grant for Visweek conference, Salt Lake City, USA

Talks (selected)

Aufdecken von Wissenstransfer-Potenzialen durch interaktive Visualisierung im Projekt IKON (*Uncovering knowledge transfer potential through interactive visualization in project IKON*)
Digitalwerkstatt Museum–Impulse für Vermittlung, Forschung & Entwicklung, 15.10.2019

Uncertainty Visualization in Practice
CityLAB Summer School Berlin, 12.09.2019

Uncertainty Visualization - Status Quo Vadis?
Information + visualization FH Potsdam, 4.2.2015

Academic Service

Reviewer for academic journals, e.g.
IEEE Transactions on Visualization and Computer Graphics (TVCG),
Frontiers in Computer Science,
International Journal of Geographical Information Science (IJGIS),
ISPRS International Journal of Geo-Information (IJGI),
Cartography and Geographic Information Science (CaGIS),
Cartographic Perspectives (CP),
Kartographische Nachrichten (KN),
Spatial Cognition & Computation (SCC), oder
Journal of Experimental Psychology: Applied (JEP-A).

Reviewer for academic conferences, e.g.
IEEE Visualization Conference (VIS) oder
ACM CHI Conference on Human Factors in Computing Systems.

Volunteering

Board member of the inclusive theater “RambaZamba” in Berlin Link

Founding member of “Computers for All” association for development of digital skills in schools Link

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Publications (journal articles in grey)

Kinkeldey, C., Fekete, J. D., Blascheck, T., & Isenberg, P. (2021). BitConduite: Exploratory Visual Analysis of Entity Activity on the Bitcoin Network. IEEE Computer Graphics and Applications. Link

Cheong, L., **Kinkeldey, C.**, Burfurd, I., Bleisch, S., & Duckham, M. (2020). Evaluating the impact of visualization of risk upon emergency route-planning. ***International Journal of Geographical Information Science***, 1-29. Link

Benjamin, J. J., **Kinkeldey, C.**, & Müller-Birn, C. (2020). Participatory Design of a Machine Learning Driven Visualization System for Non-Technical Stakeholders. *Mensch und Computer 2020-Workshopband*. Link

Kinkeldey, C., Korjakow, T., & Benjamin, J. J. (2019). Towards Supporting Interpretability of Clustering Results with Uncertainty Visualization. *EuroVis Workshop on Trustworthy Visualization (TrustVis).* Link

Kinkeldey, C., Müller-Birn, C., Gülenman, T., Benjamin, J. J., & Halfaker, A. (2019). PreCall: A Visual Interface for Threshold Optimization in ML Model Selection. *Human-Centered Machine Learning Perspectives Workshop at the ACM CHI 2019 Conference.* Link

Benjamin, J. J., Müller-Birn, C., & **Kinkeldey, C.** (2019). Understanding knowledge transfer activities at a research institution through semi-structured interviews. *Freie Universität Berlin: Technical Report*, Rep. TR-B-19-02, 2019. Link

Kinkeldey, C., & Senaratne, H. (2018). Representing Uncertainty.*The Geographic Information Science & Technology Body of Knowledge (2nd Quarter 2018 Edition)*, John P. Wilson (ed.). Link

Isenberg, P., **Kinkeldey, C.**, & Fekete, J. D. (2018). Visual Analytics for Monitoring and Exploration of Blockchain Data With a Focus on the Bitcoin Blockchain. *HCI for Blockchain: A CHI 2018 workshop on Studying, Critiquing, Designing and Envisioning Distributed Ledger Technologies*, 2018, Montréal, Canada. Link

Kinkeldey, C., Fekete, J.-D., & Isenberg, P. (2017). BitConduite: Visualizing and Analyzing Activity on the Bitcoin Network. *EuroVis – 19th EG/VGTC Conference on Visualization*, 2017. Link

Dimara, E., Valdivia, P., & **Kinkeldey, C. (**2017). DCPAIRS: A Pairs Plot Based Decision Support System. *EuroVis – 19th EG/VGTC Conference on Visualization*, 2017. Link

Isenberg, P., **Kinkeldey, C.** & Fekete, J.-D. (2017). Exploring Entity Behavior on the Bitcoin Blockchain. In: *Posters of the IEEE Conference on Visualization*, 2017. Link

Badam, S.-K., **Kinkeldey, C.** & Isenberg, P. (2016). Haztrailz: Exploratory Analysis of Trajectory and Sensor Data. *Beitrag zur VAST Challenge. IEEE VIS 2016*, Baltimore, USA. Link Video

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Publications (journal articles in grey)

Kinkeldey, C., Schiewe, J., Gerstmann, H., Götze, C., Kit, O., Lüdeke, M., Taubenböck H., & Wurm, M. (2015). Evaluating the use of uncertainty visualization for exploratory analysis of land cover change: A qualitative expert user study. ***Computers & Geosciences***, 84, 46-53. Link

Kinkeldey, C., MacEachren, A. M., Riveiro, M., & Schiewe, J. (2015). Evaluating the effect of visually represented geodata uncertainty on decision-making: systematic review, lessons learned, and recommendations. ***Cartography and Geographic Information Science***, 44(1), 1-21. Link

Kinkeldey, C., MacEachren, A. M., & Schiewe, J. (2014). How to assess visual communication of uncertainty? A systematic review of geospatial uncertainty visualisation user studies. **The Cartographic Journal**, 51(4), 372-386. **Best Cartographic Journal Article 2015** Link

Kinkeldey, C., Mason, J., Klippel, A., & Schiewe, J. (2014). Evaluation of noise annotation lines: using noise to represent thematic uncertainty in maps. ***Cartography and Geographic Information Science***, 41(5), 430-439. Link

Kinkeldey, C. (2014). Development of a prototype for uncertainty-aware geovisual analytics of land cover change. ***International Journal of Geographical Information Science***, 28(10), 2076-2089. Link

Kinkeldey, C. (2014). A concept for uncertainty-aware analysis of land cover change using geovisual analytics. ***ISPRS International Journal of Geo-Information***, 3(3), 1122-1138. Link

Schiewe, J., & **Kinkeldey, C.** (2014). Konzeption und Implementierung einer fallspezifischen Unsicherheitskette im Rahmen fernerkundlicher Auswertungen. ***Photogrammetrie – Fernerkundung – Geoinformation***, (6): 563–574. Link

Kinkeldey, C., & Schiewe, J. (2014). Geovisual-Analytics-Ansatz für die Berücksichtigung von Unsicherheiten bei multi-temporalen Veränderungsanalysen mit Fernerkundungsdaten. Jahrestagung DGfK, DGPF, GfGI und GiN, Hamburg, 26.–28. März 2014.

Bauer, E. M., Heuner, M., Fuchs, E., Schröder, U., Sundermeier, A., Bahls, A., ... & **Kinkeldey, C.** (2014). Klimabedingte Änderung der Vorlandvegetation und ihrer Funktionen in Ästuaren sowie Anpassungsoptionen für die Unterhaltung. *Schlussbericht KLIWAS-Projekt 3.09. KLIWAS-24/2014*. BfG, Koblenz. Link

Kinkeldey, C., Smith, J., Klippel, A., & Schiewe, J. (2013). Assessing the Impact of Design Decisions on the Usability of Uncertainty Visualization: Noise Annotation Lines for the Visual Representation of Attribute Uncertainty. In: *Proceedings of the 26th International Cartographic Conference*. Dresden, Germany, 25.–30. August 2013. Link

Smith, J., Retchless, D., **Kinkeldey, C.,** & Klippel, A. (2013). Beyond the Surface: Current Issues and Future Directions in Uncertainty Visualization Research. In: *Proceedings of the 26th International Cartographic Conference*. Dresden, Germany, 25.–30. August 2013. Link

Heuner, M., Bahls, A., Bauer, E.-M., **Kinkeldey, C.** , Schiewe, J., Schmidtlein, S., & Schröder, U. (2013). Erfassung der Vorlandvegetation durch Fernerkundungsmethoden unter Berücksichtigung von Unsicherheiten. *In: Traub, K.-P., Kohlus, J. & Lüllwitz, T. (Eds.): Geoinformationen für die Küstenzone, Band 4*, Verlag Sokrates und Freunde GmbH: Koblenz. Link

Kinkeldey, C., & Schiewe, J. (2012). Visualisierung thematischer Unsicherheiten mit Noise Annotation Lines. ***Kartographische Nachrichten***, 62(5): 241–249. Link

Kinkeldey, C. (2012). Development of a Framework for Uncertainty-Aware Land Cover Change Analyses with Visual Analytics Methods. *Proceedings of 1st AGILE PhD School*, 56. Link

Kinkeldey, C. & Schiewe, J. (2011). A Framework for the Multi-Temporal Analysis of Land Cover Change using Visual Analytics, In: Miksch, Silvia; Santucci, Giuseppe (Eds.): *EuroVA 2011:International Workshop on Visual Analytics*, Bergen, 31.05.2011. Eurographics, 2011. Link

Kinkeldey, C. & Schiewe, J. (2010) Countering new challenges regarding classification quality assessment methods with the help of fuzzy boundaries. *Spatial Accuracy 2010*, 20-23 July 2010, Leicester, UK. Link

Kinkeldey, C., Tomowski, D., Schiewe, J., & Ehlers, M. (2010): Entwicklung alternativer Maße zur Bewertung der Güte klassifizierter Fernerkundungsszenen. ***GIS.Science***, 23(1): 34-39. Link

Kinkeldey, C., Kornfeld, A.-L. (2010). Demo at VAST Challenge Participant Workshop. Visweek 2010, Salt Lake City, USA. Link Video

Schiewe, J., Ehlers, M., **Kinkeldey, C.**, & Tomowski, D. (2009). From fuzzy and object based classification to fuzzy and object based uncertainty evaluation. In *Remote Sensing for Environmental Monitoring, GIS Applications, and Geology IX (Vol. 7478, p. 74781L). International Society for Optics and Photonics.* Link

Schiewe, J., Ehlers, M., **Kinkeldey, C.**, & Tomowski, D. (2009). Implementation of indeterminate transition zones for uncertainty modeling in classified remotely sensed scenes. In *Haunert, J.-H., Kieler, B. & Milde, J. (Eds.): Proceedings of the 12th AGILE International Conference on Geographic Information Science, Hannover 2009.* Link

Schiewe, J., & **Kinkeldey, C.** (2009). Development of an advanced uncertainty measure for classified remotely sensed scenes. *Proceedings for ISPRS WG II/2+3+4 and Cost Workshop on Quality, Scale & Analysis Aspects of Urban City Models, Lund, Sweden, 3-4 December, 2009. ISPRS XXXVIII-2/W11.*Link