Conrad Borchers

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Education

Carnegie Mellon University	*Pittsburgh, PA, USA*
HUMAN-COMPUTER INTERACTION, PHD	*08/2022 - present*
HUMAN-COMPUTER INTERACTION, MS	*08/2022 - 08/2024*
University of Oxford	*Oxford, United Kingdom*
SOCIAL DATA SCIENCE, MSc	*10/2021 - 08/2022*
University of Tübingen	*Tübingen, Germany*
PSYCHOLOGY, BSc	*10/2018 - 07/2021*

Professional Experience

08/2022 -	**Graduate Research Assistant**, Human-Computer Interaction Institute, Carnegie Mellon University
02/2020 - 10/2024	**Research Affiliate**, Lab of Christian Fischer, University of Tübingen
11/2021 - 07/2022	**Student Researcher and Team Lead**, Oxford Artificial Intelligence Society
11/2021 - 07/2022	**Graduate Research Assistant**, Saïd Business School, University of Oxford
05/2021 - 09/2021	**Research Intern**, CAHL Lab (Zach Pardos), University of California, Berkeley
08/2020 - 01/2021	**Undergraduate Research Assistant**, Tübingen School of Education
02/2019 - 07/2020	**Undergraduate Research Assistant**, Leibniz Knowledge Media Research Center (IWM)

Awards, Fellowships, & Grants

PAPER AND THESIS AWARDS

2025	**Best Short Paper Nomination [C23]**, 15h International Learning Analytics and Knowledge Conference
2024	**Best Student Paper Award [C20]**, International Conference on Quantitative Ethnography (ICQE)
2024	**Best Interactive Event Nominee [D1]**, 25h International Conference on Artificial Intelligence in Education
2024	**Best Student Paper Award [C15]**, 17th International Conference on Educational Data Mining
2024	**Best Short Paper Award [C17]**, 17th International Conference on Educational Data Mining
2024	**Best Paper Award (AIS) [C13]**, 26th Intl. Conference On Human-Computer Interaction (HCII)
2023	**Best Full Paper Honorable Mention [C3]**, 13th International Learning Analytics and Knowledge Conference
2022	**OII Thesis Prize for Best MSc Dissertation**, Oxford Internet Institute
2021	**Best Poster Award [C2]**, 14th International Conference on Educational Data Mining

REVIEWER AWARDS

2025	**Outstanding Junior Reviewer**, Journal of Learning Analytics

INTERNAL RESEARCH FUNDING

2023	**GuSH Graduate Research Grant (Scaffolding Effects on Problem-Solving in Intelligent Tutoring Systems) [C9, C16, C20, J10] - $750**, Carnegie Mellon University

Conference Funding

2025	**GSA Conference Funding (LAK '25) - $750**, Carnegie Mellon University
2024	**GSA Conference Funding (LAK '24) - $750**, Carnegie Mellon University
2024	**Full Conference Travel Support (AIED '24) - $2,000**, Learnest
2023	**EDM2023 Travel Scholarship - $1,250**, International Educational Data Mining Conference
2023	**Prof. Ramkumar Memorial Foundation Scholarship - $100**, International Educational Data Mining Conference
2023	**GSA Conference Funding (LAK '23) - $750**, Carnegie Mellon University

Selective Fellowships, Scholarships, and Summer Schools

2024	**Ethical AI in Education Fellow**, Learnest
2022	**LearnLab Summer School Participant (ITS Track)**, Carnegie Mellon University
2022	**Merck Innovation Cup '22 Participant**, Merck KGaA (Merck Group)
2021	**Learning Engineering Fellow - 2nd Place in Tools Competition ($15,000)**, EPIC@Berkeley - UC Berkeley GSE & Schmidt Futures
2019-2020	**Research Fellow**, European Federation of Psychology Students Associations (EFPSA)
2018	**BSc and MSc Scholarship**, German Academic Scholarship Foundation (Studienstiftung)

Teaching Experience

Teaching Assistant

Su 2024	**CTAT Track Instructor**, LearnLab Summer School, Carnegie Mellon University
Fall 2023	**User-Centered Research and Evaluation**, School of Computer Science, Carnegie Mellon University
Spring 2023	**Tools for Online Learning**, School of Computer Science, Carnegie Mellon University
Spring 2021	**Cognitive Modeling**, Department of Computer Science, University of Tübingen, Germany

Guest Lectures

Spring 2025	**Tools for Online Learning**, Guest Lecture on Socio-Emotional Learning, hosted by Steven J. Moore, Carnegie Mellon University
Spring 2025	**CS 5890/6890: Topics in AI and Education**, Guest Lecture: "Enhancing Education with LLMs: Opportunities and Challenges," hosted by Yang Shi, Utah State University
Fall 2024	**CS 568: AI in Adaptive Educational Technologies**, Guest Lecture on Publications [C17] and [C15], hosted by Neil Heffernan, Worcester Polytechnic Institute
Spring 2024	**Tools for Online Learning**, Guest Lecture on Socio-Emotional Learning, hosted by Steven J. Moore, Carnegie Mellon University

Workshops

Fall 2024	**Multimodal Machine Learning: An Introductory Workshop**, Hosted by Joshua Rosenberg at the University of Tennessee, Knoxville; GitHub: https://tinyurl.com/utk-mmml
Fall 2022	**Sentence Embeddings for Twitter Research**, Introduction to Data Science Methods in Education, University of Tennessee, Knoxville; GitHub: https://tinyurl.com/sembutk

Relevant Publications

Total citations: 363 (Google Scholar, May 27th, 2025)

h-index: 10 (Google Scholar, May 27th, 2025)

Number of distinct co-authors on published papers: 105

Full list of citations per paper: `https://scholar.google.com/citations?user=v5yiJVAAAAAJ&hl=en`

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Italicized author names indicate mentored students. An asterisk (*) indicates equal contribution.

JOURNAL ARTICLES

J16 - **Borchers, C.**, Zhang, J., Fleischer, H., Schanze, S., Aleven, V. & Baker, R. S. (accepted). Large Language Models Generalize SRL Prediction to New Languages Within But Not Between Domains. *Journal of Educational Data Mining*.

J15 – **Borchers, C.** & Pardos, Z. A. (2025). Course Load Analytics Interventions on Higher Education Course Selection: Experimental Evidence. *Journal of Learning Analytics*. `https://doi.org/10.18608/jla.2025.8473`

J14 – **Borchers, C.**, Fleischer, H., Schanze, S., Scheiter, K., & Aleven, V. (2025). High scaffolding of an unfamiliar strategy improves conceptual learning but reduces enjoyment compared to low scaffolding and strategy freedom. *Computers & Education*, 236, 105364. `https://doi.org/10.1016/j.compedu.2025.105364`

J13 – **Borchers, C.**, Wang, Y., Hodge, E., & Rosenberg, J. M. (2025). Decoding Sentiment Signals: Lessons from the Political Reception of the Common Core and Next Generation Science Standards. *Educational Researcher*. `https://doi.org/10.3102/0013189X251336206`

J12 – **Borchers, C.**, Xu, Y., & Pardos, Z. A. (2025). Workload Overload? Late Enrollment Leads to Course Dropout. *Journal of Educational Data Mining*. `https://doi.org/10.5281/zenodo.14907388`

J11 – **Borchers, C.**, Darriet, C., Rosenberg, J., & López, F. (2025). Dual Intent in Dual-language Programs: Internet Data Mining of School District Communications. *TechTrends*. `https://doi.org/10.1007/s11528-025-01049-1`

J10 – **Borchers, C.**, Fleischer, H., Yaron, D. J., McLaren, B. M., Scheiter, K., Aleven, V., & Schanze, S. (2025). Problem-Solving Strategies in Stoichiometry Across Two Intelligent Tutoring Systems: A Cross-National Study. *Journal of Science Education and Technology*. `https://doi.org/10.1007/s10956-024-10197-7`

J9 – Zhang, L., Lin, J., Sabatini, J., **Borchers, C.**, Weitekamp, D., Cao, M., Hollander, J., Hu, X., & Graesser, A. C. (2025). Data Augmentation for Sparse Multidimensional Learning Performance Data Using Generative AI. *IEEE Transactions on Learning Technologies*. `https://doi.org/10.1109/TLT.2025.3526582`

J8 – Pritchard, C., **Borchers, C.**, Rosenberg, J. M., Fox, A. K., & Stegenga, S. M. (2024). The datafication of student information on X (Twitter). *Computers and Education Open, 7, 100197*. `https://doi.org/10.1016/j.caeo.2024.100197`

J7 – **Borchers, C.***, Rosenberg, J.*, & Swartzentruber, R. M.* (2023). Facebook Post Data: A Primer for Educational Research. *Educational Technology Research and Development.* `https://doi.org/10.1007/s11423-023-10269-2`

J6 – **Borchers, C.***, Eder, T. F.*, Richter, J., Keutel, C., Huettig, F., & Scheiter, K. (2023). A Time Slice Analysis of Dentistry Students' Visual Search Strategies and Pupil Dilation during Diagnosing Radiographs. *PloS one*. `https://doi.org/10.1371/journal.pone.0283376`

J5 – Pardos, Z. A., **Borchers, C.**, & Yu, R. (2023). Credit hours is not enough: Explaining undergraduate perceptions of course workload using LMS records. *The Internet and Higher Education, 56*, 100882. `https://doi.org/10.1016/j.iheduc.2022.100882`

J4 – Rosenberg, J., **Borchers, C.**, Stegenga, S., Burchfield, M., Anderson, D., & Fischer, C. (2022). How educational institutions reveal students' personally identifiable information on Facebook. *Learning, Media and Technology*. Advanced Online Publication. `https://doi.org/10.1080/17439884.2022.2140672`

J3 – Rosenberg, J., **Borchers, C.**, Burchfield, M., Anderson, D., Stegenga, S., & Fischer, C. (2022). Posts About Students on Facebook: A Data Ethics Perspective. *Educational Researcher*. Advanced Online Publication. `https://doi.org/10.3102/0013189X221120538`

J2 – Rosenberg, J., Burchfield, M., **Borchers, C.**, Gibbons, B., Anderson, D., & Fischer, C. (2021). Social media and students' privacy: What schools and districts should know. *Phi Delta Kappan, 103*(2), 49-53. `https://doi.org/10.1177/00317217211051145`

J1 – Rosenberg, J., **Borchers, C.**, Dyer, E., Anderson, D. & Fischer, C. (2021). Understanding Public Sentiment About Educational Reforms: The Next Generation Science Standards on Twitter. *AERA Open, 7*(1), 1-17. `https://doi.org/10.1177/23328584211024261`

CONFERENCE PROCEEDINGS [PEER-REVIEWED]

C37 – Fleischer, H., Noglik, A., **Borchers, C.**, & Schanze, S. (in-press). Does Student Learning Rate Depend on Feedback Type and Prior Knowledge? *Proceedings of the 18th International Conference on Educational Data Mining (EDM 2025)*. Palermo, Italy.

C36 – Jin, Q., **Borchers, C.**, Fanscali, S., & Aleven, V. (in-press). Predicting Teacher Interventions in K-12 Classrooms Using Disengagement, Struggle and Help-Seeking. *Proceedings of the 18th International Conference on Educational Data Mining (EDM 2025)*. Palermo, Italy.

C35 – Simon, S., Tajik, E., **Borchers, C.**, Shahrokhian, B., Sankaranarayanan, S., Balzan, F., Strauss, S., Viswanathan, S. A., Atas, A. H., Carapina, M., Liang, L., & Celik, B. (in-press). Comparing Human and LLM-Generated Inductive Thematic Analyses: Assessing Agreement in Coding Consistency and Interpretative Accuracy. *Proceedings of 26th International Conference on Artificial Intelligence in Education (AIED)*. Palermo, Italy.

C34 – **Borchers, C.**, Houk, A., Aleven, V., & Koedinger, K. R. (in-press). Engagement and Learning Benefits of Goal Setting with Rewards in Human-AI Tutoring. *Proceedings of 26th International Conference on Artificial Intelligence in Education (AIED)*. Palermo, Italy.

C33 – **Borchers, C.**, Nguyen, H. T., Carvalho, P. F., Koedinger, K. R., & Aleven, V. (in-press). Involving Parents and Caregivers in Intelligent Tutoring Systems: A Design Probe Study. *Proceedings of 26th International Conference on Artificial Intelligence in Education (AIED)*. Palermo, Italy.

C32 – **Borchers, C.** & *Shou, T.* (in-press). Can Large Language Models Match Tutoring System Adaptivity? A Benchmarking Study. *Proceedings of 26th International Conference on Artificial Intelligence in Education (AIED)*. Palermo, Italy.

C31 – **Borchers, C.**, Peng, C., Lyu, Q., Carvalho, P. F., Koedinger, K. R., & Aleven, V. (in-press). Student Perceptions of Adaptive Goal Setting Recommendations: A Design Prototyping Study. *Proceedings of 26th International Conference on Artificial Intelligence in Education (AIED)*. Palermo, Italy.

C30 – Thomas, D. R., **Borchers, C.**, Bhushan, S., Kakarla, S., Houk, A., Abboud, R., Gatz, E., Gupta, S., & Koedinger, K. R. (in-press). Improving Open-Response Assessment with LearnLM. *Proceedings of 26th International Conference on Artificial Intelligence in Education (AIED)*. Palermo, Italy.

C29 – Gurung, A., Lin, J., Huang, Z., **Borchers, C.**, Baker, R. S., Aleven, V., & Koedinger, K. R. (in-press). Starting Seatwork Earlier as a Valid Measure of Student Engagement. *Proceedings of the 18th International Conference on Educational Data Mining (EDM)*. Palermo, Italy.

C28 – **Borchers, C.** (in-press). Toward Sufficient Statistical Power in Algorithmic Bias Assessment: A Test for ABROCA. *Proceedings of the 18th International Conference on Educational Data Mining (EDM)*. Palermo, Italy.

C27 – Thomas, D. R., **Borchers, C.**, Kakarla, S., Lin, J., Bhushan, S., Guo, B., Gatz, E., & Koedinger, K. R. (2025). Do Tutors Learn from Equity Training and Can Generative AI Assess It? *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706531`

C26 – Thomas, D. R., **Borchers, C.**, Kakarla, S., Lin, J., Bhushan, S., Guo, B., Gatz, E., & Koedinger, K. R. (2025). Does Multiple Choice Have a Future in the Age of Generative AI? A Posttest-Only RCT. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706530`

C25 – *Venugopalan, D.*, *Yan, Z.*, **Borchers, C.**, Lin, J., & Aleven, V. (2025). Combining Large Language Models with Tutoring System Intelligence: A Case Study in Caregiver Homework Support. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706516`

C24 – Butler, R., **Borchers, C.**, Asher, M., Lee, Y., Karnataki, S., Dangi, S., Athreya, S., Stamper, J., Ogan, A., & Carvalho, P. (2025). Does the Doer Effect Generalize to Non-WEIRD Populations? Toward Analytics in Radio and Phone-Based Learning. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706505`

C23 – **Borchers, C.** & Baker, R. S. (2025). ABROCA Distributions for Algorithmic Bias Assessment: Considerations Around Interpretation. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706498`

C22 – Švábenský, V., **Borchers, C.**, Cloude, E. B., & Shimada, A. (2025). Evaluating the Impact of Data Augmentation on Predictive Model Performance. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706485`

C21 – **Borchers, C.***, Ooge, J.*, *Peng, C.*, & Aleven, V. (2025). How Learner Control and Explainable Learning Analytics About Skill Mastery Shape Student Desires to Finish and Avoid Loss in Tutored Practice. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK)*. Dublin, Ireland. ACM. `https://doi.org/10.1145/3706468.3706484`

C20 – Zhang, J.*, **Borchers, C.***, & Barany, A. (2024). Studying the Interplay of Self-Regulated Learning Cycles and Scaffolding Through Ordered Network Analysis Across Three Tutoring Systems. *Proceedings of the International Conference on Quantitative Ethnography (ICQE)*, Philadelphia, PA, USA. `https://doi.org/10.1007/978-3-031-76335-9_17`

C19 – Yang, K. B.*, **Borchers, C.***, Falhs, A.-C., Echeverria, V., Karumbaiah, S., Rummel, N., & Aleven, V. (2024). Leveraging Multimodal Classroom Data for Teacher Reflection: Teachers' Preferences, Practices, and Privacy Considerations. *Proceedings of the 19th European Conference on Technology Enhanced Learning (EC-TEL)*, Krems, Austria. `https://doi.org/10.1007/978-3-031-72315-5_34`

C18 – Baucks, F.*, Schmucker, R.*, **Borchers, C.**, Pardos, Z. A., & Wiskott, L. (2024). Gaining Insights into Group-Level Course Difficulty via Differential Course Functioning. *Proceedings of the Tenth (2024) ACM Conference on Learning@Scale (L@S)*. Atlanta, GA, USA. `https://doi.org/10.1145/3657604.3662028`

C17 – **Borchers, C.**, Xu, Y., & Pardos, Z. A. (2024). Are You an Early Dropper or Late Shopper? Mining Enrollment Transaction Data to Study Procrastination in Higher Education. *Proceedings of the 17th International Conference on Educational Data Mining (EDM)*. Atlanta, GA, USA. `https://doi.org/10.5281/zenodo.12729852`

C16 – Zhang, J., **Borchers, C.**, Aleven, V., & Baker, R. S. (2024). Using Large Language Models to Detect Self-Regulated Learning in Think-Aloud Protocols. *Proceedings of the 17th International Conference on Educational Data Mining (EDM)*. Atlanta, GA, USA. `https://doi.org/10.5281/zenodo.12729790`

C15 – **Borchers, C.**, Yang, K., Lin, J., Rummel, N., Koedinger, K. R., & Aleven, V. (2024). Combining Dialog Acts and Skill Modeling: What Chat Interactions Enhance Learning Rates During AI-Supported Peer Tutoring? *Proceedings of the 17th International Conference on Educational Data Mining (EDM)*. Atlanta, GA, USA. `https://doi.org/10.5281/zenodo.12729784`

C14 – **Borchers, C.**, Liu, X., Lee, H. H., & Zhang, J. (2024). Ethical AIED and AIED Ethics: Toward Synergy Between AIED Research and Ethical Frameworks. *Proceedings of 25th International Conference on Artificial Intelligence in Education (AIED) — BlueSky Track*. Recife, Brazil. `https://doi.org/10.1007/978-3-031-64315-6_2`

C13 – Zhang, L., Lin, J., **Borchers, C.**, Sabatini, J., Hollander, J., Cao, M., & Hu, X. (2024). Predicting Learning Performance with Large Language Models: A Study in Adult Literacy. *Proceedings of the 26th International Conference On Human-Computer Interaction (HCII)*. Washington, DC, USA. `https://doi.org/10.1007/978-3-031-60609-0_24`

C12 – *Peng, C.*, **Borchers, C.**, & Aleven, V. (2024). Designing Homework Support Tools for Middle School Mathematics Using Intelligent Tutoring Systems. *Proceedings of the 2024 Annual Meeting of the International Society of the Learning Sciences (ISLS)*. Buffalo, NY, USA. `https://doi.org/10.22318/icls2024.989202`

C11 – *Nguyen, H. T.*, **Borchers, C.**, Xia, M., & Aleven, V. (2024). Designing Tools for Caregiver Involvement in Intelligent Tutoring Systems for Middle School Mathematics. *Proceedings of the 2024 Annual Meeting of the International Society of the Learning Sciences (ISLS)*. Buffalo, NY, USA. `https://doi.org/10.22318/icls2024.630637`

C10 – **Borchers, C.**, Wang, Y., Karumbaiah, S., Ashiq, M., Shaffer, D. W., & Aleven, V. (2024). Revealing Networks: Understanding Effective Teacher Practices in AI-Supported Classrooms using Transmodal Ordered Network Analysis. *Proceedings of the 14th International Learning Analytics and Knowledge Conference (LAK)*. Kyoto, Japan. ACM. `https://doi.org/10.1145/3636555.3636892`

C9 – **Borchers, C.**, Zhang, J., Baker, R. S., & Aleven, V. (2024). Using Think-Aloud Data to Understand Relations between Self-Regulation Cycle Characteristics and Student Performance in Intelligent Tutoring Systems. *Proceedings of the 14th International Learning Analytics and Knowledge Conference (LAK)*. Kyoto, Japan. ACM. `https://doi.org/10.1145/3636555.3636911`

C8 – **Borchers, C.**, Carvalho, P. F., Xia, M., Liu, P., Koedinger, K. R., & Aleven, V. (2023). What Makes Problem-Solving Practice Effective? Comparing Paper and AI Tutoring. *Proceedings of the 18th European Conference on Technology Enhanced Learning (EC-TEL)*. Aveiro, Portugal. `https://doi.org/10.1007/978-3-031-42682-7_4`

C7 – Karumbaiah, S., **Borchers, C.**, Shou, T., Falhs, A.-C., Liu, C., Nagashima, T., Rummel, N., & Aleven, V. (2023). A Spatiotemporal Analysis of Teacher Practices in Supporting Student Learning and Engagement in an AI-enabled Classroom.

Proceedings of the 24th International Conference on Artificial Intelligence in Education (AIED). Tokyo, Japan. `https://doi.org/10.1007/978-3-031-36272-9_37`

C6 – *Shou, T.*, **Borchers, C.**, Karumbaiah, S., & Aleven, V. (2023). Optimizing Parameters for Accurate Position Data Mining in Diverse Classrooms Layouts. *Proceedings of the 16th International Conference on Educational Data Mining (EDM)*. Bengaluru, India. `https://doi.org/10.5281/zenodo.8115685`

C5 – **Borchers, C.**, Klein, L., Johnson, H., & Fischer, C. (2023). Timing Matters: Inferring Educational Twitter Community Switching from Membership Characteristics. *Proceedings of the 16th International Conference on Educational Data Mining (EDM)*. Bengaluru, India. `https://doi.org/10.5281/zenodo.8115752`

C4 – Karumbaiah, S.*, **Borchers, C.***, Falhs, A.-C.*, Holstein, K., Rummel, N., & Aleven, V. (2023). Teacher Noticing and Student Learning in Human-AI Partnered Classrooms: A Multimodal Analysis. *Proceedings of the 2023 Annual Meeting of the International Society of the Learning Sciences (ISLS)*. Montréal, Canada. `https://doi.org/10.22318/icls2023.151200`

C3 – **Borchers, C.** & Pardos, Z. A. (2023). Insights into undergraduate pathways using course load analytics. *Proceedings of the 13th International Learning Analytics and Knowledge Conference (LAK)*. Arlington, TX, USA. ACM. `https://doi.org/10.1145/3576050.3576081`

C2 – **Borchers, C.**, Rosenberg, J., Gibbons, B., Burchfield, M., & Fischer, C. (2021). To Scale or Not to Scale: Comparing Popular Sentiment Analysis Dictionaries on Educational Twitter Data. *Proceedings of the 14th International Conference on Educational Data Mining (EDM)*. Paris, France.

C1 – Burchfield, M., Rosenberg, J., **Borchers, C.**, Thomas, T., Gibbons, B., & Fischer, C. (2021). Are Violations of Student Privacy "Quick and Easy"? Investigating the Privacy of Students' Images and Names in the Context of K-12 Educational Institution's Posts on Facebook. *Proceedings of the 14th International Conference on Educational Data Mining (EDM)*. Paris, France.

WORKSHOP PUBLICATIONS [PEER-REVIEWED]

W7 – Sankaranarayanan, S., **Borchers, C.**, Simon, S., Tajik, E., Atas, A. H., Celik, B., Balzan, F., & Shahrokhian, B. (2025). Automating Thematic Analysis with Multi-Agent LLM Systems. *From Data to Discovery: LLMs for Qualitative Analysis in Education at LAK25*.

W6 – **Borchers, C.**, Thomas, D. R., Lin, J., Abboud, R., & Koedinger, K. R. (2025). Augmenting Human-Annotated Training Data with Large Language Model Generation and Distillation in Open-Response Assessment. *Proceedings of the Second Workshop on Generative AI for Learning Analytics (GenAI-LA) at LAK25*.

W5 – *Kakarla, S.*, **Borchers, C.**, Thomas, D. R., Bhushan, S., & Koedinger, K. R. (2025). Comparing Few-Shot Prompting of GPT-4 LLMs with BERT Classifiers for Open-Response Assessment in Tutor Equity Training. *Proceedings of the Innovation and Responsibility in AI-Supported Education (iRAISE) Workshop at AAAI25*.

W4 – Aleven, V., **Borchers, C.**, Huang, Y., Nagashima, T., McLaren, B., Carvalho, P., Popescu, O., Sewall, J., & Koedinger, K. (2024). An Integrated Platform for Studying Learning with Intelligent Tutoring Systems: CTAT+TutorShop. *Proceedings of the Fifth Annual Workshop on Learning@Scale 2024: A/B Testing and Platform-Enabled Learning Research*.

W3 – Zhang, L., Lin, J., **Borchers, C.**, Cao, M., & Hu, X. (2024). 3DG: A Framework for Using Generative AI for Handling Sparse Learner Performance Data From Intelligent Tutoring Systems. *Proceedings of the First Workshop on Generative AI for Learning Analytics (GenAI-LA) at LAK24*.

W2 – Han, Z. F., Lin, J., Gurung, A., Thomas, D. R., Chen, E., **Borchers, C.**, Gupta, S., & Koedinger, K. R. (2024). Improving Assessment of Tutoring Practices using Retrieval-Augmented Generation. *Proceedings of the AAAI2024 Workshop on AI for Education - Bridging Innovation and Responsibility*.

W1 – **Borchers, C.***, Gala, D. S.*, Gilburt, B.*, Oravkin, E., Bounsi, W., Asano, Y. M., & Kirk, H. R. (2022). Looking for a Handsome Carpenter! Debiasing GPT-3 Job Advertisements. *Proceedings of the 4th Workshop on Gender Bias in Natural Language Processing (NAACL)*.

CONFERENCE DEMO PUBLICATIONS [PEER-REVIEWED]

D2 – Yang, K., Zhao, Y., **Borchers, C.**, Fang, Y., Kim, J., Butt, A., Popescu, O., Gupte, S., Chiu, A., Shen, P., Rummel, N., & Aleven, V. (2025). Reflecto: A Teacher Reflection Tool Leveraging Multimodal Learning and Teaching Analytics. *26th International Conference on Artificial Intelligence in Education (AIED)*.

D1 – Rao, J., **Borchers, C.**, & Lin, J. (2024). Coursera-REC: Explainable MOOCs Course Recommendation using RAG-facilitated LLMs. *25th International Conference on Artificial Intelligence in Education (AIED)*.

Student-led Conferences, White Papers, and Blog Posts

M3 – **Borchers, C.** (2020). Die Replikationskrise in der Psychologie - Reflexionen und Implikationen für die Erziehungswissenschaft. [The Replication Crisis in Psychology - Reflections and Implications for Pedagogy]. Dynamiken des Pädagogischen Perspektiven auf Studium, Theorie und Praxis. Budrich.

M2 – **Borchers, C.**, Rosenberg, J., & Fischer, C. (2020). An Examination of the #NGSSchat Storify Database. `https://doi.org/10.31219/osf.io/4tafx`

M1 – **Borchers, C.**, Ferdinand, J., & Fischer, C. (2020). Inquiry-based Learning: Forschendes Lernen im Unterricht. [Inquiry-based learning in classroom instruction]. `https://lead.schule/blog/forschendes-lernen-im-unterricht/`

Presentations & Invited Talks

Conference Presentations

P9 – Fleischer, H., **Borchers, C.**, Schanze, S., & Aleven, V. (2024, September). Fehlerklassifizierung beim Tutor-Gestützten Lösen von Stöchiometrieaufgaben [Error Classification in Tutor-Supported Stoichiometry Problem Solving]. Presentation at the 2024 Annual Meeting of the Gesellschaft für Didaktik der Chemie und Physik (GDCP), Bochum, Germany.

P8 – Rosenberg, J. M., Pritchard, C., **Borchers, C.**, Burchfield, M., Fischer, C., Fox, A. K., & Stegenga, S. (2024, March). Data ethics in the open: Navigating student information risks in educational social media. Presentation at the Data Science & Social Research, 4th International Conference. https://dssr2024.unina.it/index.html

P7 – Gold, G., **Borchers, C.**, & Carvalho P. F. (2024, March). Students' Academic Performance and Goal Orientation Relate to Initial Knowledge but Not Learning Rate. Poster presented at the 14th International Learning Analytics and Knowledge Conference (LAK), Kyoto, Japan.

P6 – Fischer, C., Morina, F., **Borchers, C.**, & Klein, L. (2023, August). Online Communities of Practice on Twitter: A Case Study of the German Educational Twittersphere. Paper presented at the 20th Biennial EARLI Conference, Thessaloniki, Greece.

P5 – **Borchers, C.**, & Braesemann, F.. Correlation networks predict success of digital technologies (2022, November). Paper presented at the the 11th International Conference on Complex Networks and their Applications, Palermo, Italy.

P4 – Fischer, C., Morina, F., **Borchers, C.**, Klein, L., & Eich, M. (2022, April). Informal Professional Development in Online Communities of Practice at Scale: Mapping Nationwide Educational Twitterspheres. Paper presented at the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.

P3 – **Borchers, C.**, Eder, T., & Scheiter, K. (2021, September). How Effective is Reflective search? A Time Slice Analysis of Dentistry Students' Visual Search Strategies and Pupil Dilation during Diagnosing Radiographs. Paper presented at the 2nd Workshop on Mental Effort, Virtual Conference.

P2 – Rosenberg, J., **Borchers, C.**, Gibbons, B., Dyer, E., Anderson, D., & Fischer, C. (2021, April). Don't worry, be happy? A sentiment analysis of the #NGSSchat Twitter community. Paper presented at the 2021 Annual Meeting of the American Educational Research Association, Virtual Conference.

P1 – Fischer, C., Morina, F., **Borchers, C.**, & Klein, L. (2021, March). Using Big Data to Support Educational Change: Twitter as a Platform for Informal Professional Development. Paper presented at the 2021 Annual Meeting of the Leibniz Education Research Network, Hannover, Germany.

Invited Talks

T6 – **Borchers, C.** (2025, April). Designing Tools for Caregiver Involvement in Intelligent Tutoring Systems. GSA Scholar to Scholar Carnegie Mellon University. **GSA Academic Affairs Member Award 2024/25.**

T5 – **Borchers, C.** (2024, November). LLMs in Educational Research: Recent Trends and Three Future Directions. Interdisciplinary Education Seminar at the University of Tennessee, Knoxville.

T4 – **Borchers, C.** (2024, September). To Improve Education with LLMs, Do More Than Just LLMs. Learning Analytics (AMA Series; M.S.Ed. Online), University of Pennsylvania GSE

T3 – **Borchers, C.** (2024, May). Envisioning LLMs as Tools for Educational Research and Practice Rather than Instructional Replacements. Invited Talk at the ALTTAI Seminar at the University of Memphis.

T2 – **Borchers, C.** (2022, October). Debiasing GPT-3 Job Ads. The Data Skeptic Podcast hosted by Kyle Polich.

T1 – **Borchers, C.** (2022, September). Leveraging data science to improve educational processes: From K-12 student privacy on social media to higher education student workload. Invited talk at the Department of Theory & Practice in Teacher Education, University of Tennessee, Knoxville.

Mentoring

Su 2025	**Manit Patel**, SURA, School of Computer Science, Carnegie Mellon University
Su 2025	**Hana Benko**, SURA, School of Computer Science, Carnegie Mellon University
Su 2025	**Aarna Chowdhary**, SURA, School of Computer Science, Carnegie Mellon University
Su 2025	**Arush Khare**, SURA, School of Computer Science, Carnegie Mellon University
Su 2025	**Haley Noh**, NSF REU, Carnegie Mellon University
Su 2025	**Karen Xiao**, NSF REU, Carnegie Mellon University
Su 2025	**Shi (Eric) Qiu**, NSF REU, Carnegie Mellon University
Spring 2025	**Vardaan Gupta**, Undergraduate Independent Study, Carnegie Mellon University
Spring 2025	**Kevin Tang**, Independent Undergraduate Research, Carnegie Mellon University
2024/25	**Katherine Zhao**, SURA+Lab Intern, School of Computer Science, Carnegie Mellon University
2024/25	**Siyu (Dorian) Pan**, Lab Intern, Carnegie Mellon University
Su 2024	**Hrugved Anantrao Pawar**, Summer Lab Intern, Carnegie Mellon University
Su 2024	**Kloe Chen**, Summer Lab Intern, Carnegie Mellon University
Su 2024	**Doris Gao**, Summer Lab Intern, Carnegie Mellon University
Su 2024	**Zoey Yan**, NSF REU, Carnegie Mellon University
SpSu 2024	**Devika Venikopalan**, SURA, School of Computer Science, Carnegie Mellon University
Fall 2023	**Snigdha Tiwari**, Research Assistant, Carnegie Mellon University
Fall 2023	**Dhruvisha Mondhe**, METALS Independent Study, Carnegie Mellon University
2023/24/25	**Kennion Gubler**, NSF REU and Independent Study, Carnegie Mellon University
Su 2023	**Ha Tien Nguyen**, NSF REU, Carnegie Mellon University
Su 2023	**Cindy Peng**, NSF REU, Carnegie Mellon University
Spring 2023	**Jialin Ye**, MHCI Independent Study, Carnegie Mellon University
Spring 2023	**Avani Guduri**, Undergraduate Independent Study, Carnegie Mellon University
2022/24/25	**Tianze (Steven) Shou**, Independent Study, Carnegie Mellon University

Service to the Academic Community

WORKSHOPS ORGANIZED

2025	**CSCL Paradigm Building Workshop**, Conrad Borchers, Francesco Balzan, Berkan Celik, Bahar Shahrokhian, Amine Hatun Ataş, Mia Čarapina, Sebastian Simon, Elham Tajik, Gaëlle Molinari and Carol Kwai Kuen Chan	*ISLS'25*

PEER REVIEW

2025	**BMC Medical Education**, Ad-hoc Reviewer
2025	**International Journal of Human-Computer Interaction**, Ad-hoc Reviewer
2025	**Journal of Educational Data Mining**, Ad-hoc Reviewer
2024-2025	**IEEE Transactions on Learning Technologies**, Ad-hoc Reviewer
2024	**Frontiers in Artificial Intelligence**, Ad-hoc Reviewer
2024	**Springer Scientific Reports**, Ad-hoc Reviewer
2024-2025	**British Journal of Educational Technology**, Ad-hoc Reviewer
2024	**Frontiers in Education**, Ad-hoc Reviewer

2024-2025	**Journal of Learning Analytics**, Ad-hoc Reviewer
2024	**Journal of Infrastructure, Policy and Development**, Ad-hoc Reviewer
2024	**Teaching and Teacher Education**, Ad-hoc Reviewer
2024	**American Journal of Education**, Ad-hoc Reviewer
2025	**ICIS**, Conference Proceedings
2024	**RecSys**, Conference Proceedings
2024-2025	**L@S**, Conference Proceedings
2024	**CSCW**, Conference Proceedings
2024-2025	**EDM**, Conference Proceedings
2024-2025	**AIED**, Conference Proceedings
2024-2025	**CHI**, Conference Proceedings
2024-2025	**LAK**, Conference Proceedings
2024	**AAAI**, Workshop Track
2023-2025	**ISLS**, Conference Proceedings
2022-2024	**AERA**, Annual Meeting Proceedings
2023	**NeurIPS**, Workshop Track

COMMITTEE WORK

2025	**IJAIED Track Chair**, International Conference on Artificial Intelligence in Education (AIED)
2025	**Research Track Junior Advisory Board Member**, International Conference on Artificial Intelligence in Education (AIED)
2023-2025	**Graduate Student Assembly Representative**, Carnegie Mellon University
2023-2025	**NSF REU Summer Intern Admissions Committee**, Carnegie Mellon University

VOLUNTEERING

2023-2024	**EDM**, Student Volunteer
2023-2024	**ISLS**, Student Volunteer