

Keith Vertanen

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EDUCATION

- Ph.D. University of Cambridge, 2009
Thesis: “Efficient Correction Interfaces for Speech Recognition”
Advisor: Sir David J.C. MacKay FRS
- M.Phil. University of Cambridge, Computer Speech, Text and Internet Technology, 2004
Thesis: “Efficient Computer Interfaces Using Continuous Gestures, Language Models, and Speech”
Advisors: Sir David J.C. MacKay FRS and Steve Young FREng
- M.S. Oregon State University, Computer Science, 1999
Thesis: “A Parallel Implementation of a Fluid Flow Simulation using Smoothed Particle Hydrodynamics”
Advisor: Michael Quinn
- B.A. University of Minnesota, Morris, double major: Computer Science (honors) and Math, 1997

PROFESSIONAL EXPERIENCE

Dave House Professor in Computing, Michigan Technological University	2026–present
Dave House Associate Professor in Computing, Michigan Technological University	2022–2026
Associate Professor, Michigan Technological University	2019–2022
Assistant Professor, Michigan Technological University	2015–2019
Associate Professor, Montana Tech	2014–2015
Assistant Professor, Montana Tech	2011–2014
Lecturer, Princeton University	2010–2011
Postdoctoral Research Associate, University of Cambridge	2009–2010

RESEARCH FUNDING

Federal grants:

- 2025 NSF (IIS 2402876): Collaborative Research: HCC: Medium: Enhancing Communication and Interaction for Individuals with Severe Disabilities: A Novel Interface Leveraging Multiple Information Sources, PI, collaborators: MIT, Oregon Health & Science University, \$1.2M total; Michigan Tech share \$457K
- 2024 NIH (DC009834): Optimizing BCI-FIT: Brain Computer Interface - Functional Implementation Toolkit, subcontractor, collaborators: Oregon Health & Science University, Northeastern University; Michigan Tech share \$129K
- 2019 NSF (IIS 1909089): CHS: Small: Rich Surface Interaction for Augmented Environments, PI, \$515K
- 2019 NSF (IIS 1909248): CHS: Small: Collaborative Research: Improving Mobile Device Input for Users Who are Blind or Low Vision, PI, collaborators: Cornell, \$500K total; Michigan Tech share \$226K
- 2018 NSF (IIS 1750193): CAREER: Technology Assisted Conversations, sole PI, \$539K

Industry gifts:

- 2024 Meta research gift, sole PI, \$50K
- 2022 Meta research gift, sole PI, \$25K
- 2022 Google Faculty Research Award, sole PI, \$60K
- 2016 Google Faculty Research Award, sole PI, \$47K
- 2009 Nokia: Creating Enjoyable and Fluid Mobile Phone Touch-Screen Interfaces, co-PI; University of Cambridge, \$18K
- 2006 Nokia: A Mobile Speech Recognition Correction Interface, sole PI; University of Cambridge, \$10K

University grants:

- 2018 Michigan Tech Research Excellence Fund: Automatic Speech Recognition using Deep Neural Networks, sole PI, \$45K
- 2018 Michigan Tech Institute of Computing and Cybersystems (ICC), Paul William Seed Grant: Sensing and Feedback for On-Body Input, PI, \$44K
- 2013 Montana Tech High Performance Computing Seed Grant, sole PI, \$5K
- 2012 Montana Tech New Faculty Seed Grant, sole PI, \$5K

CONFERENCE AND JOURNAL PUBLICATIONS

Student coauthors denoted by *. Acceptance rates listed where available.

- [1] Gaines, D., **Vertanen, K.** Adapting Large Language Models for Character-based Augmentative and Alternative Communication. In *Proceedings of the ACL Conference on Empirical Methods in Natural Language Processing (EMNLP 2025, findings)*. Acceptance rate (main+findings): 40% [[PDF](#)]
- [2] Frisch, B. *, **Vertanen, K.** Designing AAC for Use in Social and Community Contexts: A Scoping Review. *Augmentative and Alternative Communication (2025)*. Acceptance rate: 33%
- [3] Gaines, D., **Vertanen, K.** Identifying the Desired Word Suggestion in Simultaneous Audio. In *Proceedings of the International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2025)*. Acceptance rate: 64% [[PDF](#)]
- [4] Gaines, D., **Vertanen, K.** Perceptions of Blind Adults on Non-Visual Mobile Text Entry. In *Proceedings of the International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2025)*. Acceptance rate: 64% [[PDF](#)]
- [5] Nowrin, S., **Vertanen, K.** Using Confidence Scores to Improve Eyes-free Detection of Speech Recognition Errors. In *Proceedings of the International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2025)*. Acceptance rate: 64% [[PDF](#)]
- [6] Peters, B., Celik, B., Gaines, D., Galvin-McLaughlin, D., Imbiriba, T., Kinsella, M., Klee, D., Lawhead, M., Memmott, T., Smedemark-Margulies, N., Wiedrick, J., Erdogmus, D., Oken, B., **Vertanen, K.**, Fried-Oken, M. RSVP Keyboard with Inquiry Preview: Mixed Performance and User Experience with an Adaptive, Multimodal Typing Interface Combining EEG and Switch Input. *Journal of Neural Engineering (2025)*, 22(1): 016022. Acceptance rate: 27% [[PDF](#)]

- [7] Richardson, M., Botros, F., Shi, Y., Guo, P., Snow, B. J., Zhang, L., Dong, J., **Vertanen, K.**, Ma, S., Wang, R. StegoType: Surface Typing from Egocentric Cameras. In *Proceedings of the ACM Symposium on User Interface Software and Technology (UIST 2024)*. Acceptance rate: 22% [\[PDF\]](#)
- [8] Gaines, D.* , **Vertanen, K.** Improving FlexType: Ambiguous Text Input for Users with Visual Impairments. In *Proceedings of the International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2024)*. [\[PDF\]](#)
- [9] Nowrin, S.* , **Vertanen, K.** Leveraging Large Pretrained Models for Line-by-Line Spoken Program Recognition. In *Proceedings of the IEEE Conference on Acoustics, Speech, and Signal Processing (ICASSP 2024)*. Acceptance rate: 45% [\[PDF\]](#)
- [10] Bonaker, N.* , Nel, E.-M., **Vertanen, K.**, Broderick, T. A Usability Study of Nomon: A Flexible Interface for Single-Switch Users. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2023)*. Acceptance rate: 30% [\[PDF\]](#)
- [11] Adhikary, J.* , **Vertanen, K.** Language Model Personalization for Improved Touchscreen Typing. In *Proceedings of the International Conference on Spoken Language Processing (Interspeech 2023)*. Acceptance rate: 50% [\[PDF\]](#)
- [12] Nowrin, S.* , **Vertanen, K.** Programming by Voice: Exploring User Preferences and Speaking Styles. In *Proceedings of the 5th Conference on Conversational User Interfaces (CUI 2023)*. Acceptance rate: 37% [\[PDF\]](#)
- [13] Gaines, D.* , Baker, M.* , **Vertanen, K.** FlexType: Flexible Text Input with a Small Set of Input Gestures. In *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2023)*. Acceptance rate: 24% [\[PDF\]](#)
- [14] Kristensson, P.O., Mjelde, M., **Vertanen, K.** Understanding Adoption Barriers to Dwell-Free Eye-Typing: Design Implications from a Qualitative Deployment Study and Computational Simulations. In *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2023)*. Acceptance rate: 24% [\[PDF\]](#)
- [15] Bonaker, N.* , Nel, E.-M., **Vertanen, K.**, Broderick, T. A Performance Evaluation of Nomon: A Flexible Interface for Noisy Single-Switch Users. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*. Acceptance rate: 25% [\[PDF\]](#)
- [16] Adhikary, J.* , **Vertanen, K.** Accelerating Text Communication via Abbreviated Sentence Input. In *Proceedings of the Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (ACL 2021)*. Acceptance rate: 21% [\[PDF\]](#)
- [17] Adhikary, J.* , **Vertanen, K.** Typing on Midair Virtual Keyboards: Exploring Visual Designs and Interaction Styles. In *Proceedings of INTERACT (2021)*. Acceptance rate: 27% [\[PDF\]](#)
- [18] Gaines, D.* , Kristensson, P.O., **Vertanen, K.** Enhancing the Composition Task in Text Entry Studies: Eliciting Difficult Text and Improving Error Rate Calculation. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2021)*. Acceptance rate: 26% [\[PDF\]](#)
- [19] Adhikary, J.* , **Vertanen, K.** Text Entry in Virtual Environments using Speech and a Midair Keyboard. *IEEE Transactions on Visualization and Computer Graphics (TVCG 2021)*. **TVCG Best Journal Nominee**. Acceptance rate: 16% [\[PDF\]](#)
- [20] **Vertanen, K.**, Kristensson, P.O. Mining, Analyzing, and Modeling Text Written on Mobile Devices. *Natural Language Engineering (NLE 2019)*, 27(1): 33 pages. Acceptance rate: 17% [\[PDF\]](#)

- [21] **Vertanen, K.**, Gaines, D. *, Fletcher, C. *, Stange, A.M. *, Watling, R. *, Kristensson, P.O. VelociWatch: Designing and Evaluating a Virtual Keyboard for the Input of Challenging Text. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2019)*. Acceptance rate: 24% [\[PDF\]](#)
- [22] Dudley, J.J. *, **Vertanen, K.**, Kristensson, P.O. Fast and Precise Touch-Based Text Entry for Head-Mounted Augmented Reality with Variable Occlusion. *ACM Transactions on Computer-Human Interaction (TOCHI 2018)*, 25(6): Article 30, 40 pages. Acceptance rate: 17% [\[PDF\]](#)
- [23] **Vertanen, K.**, Fletcher, C. *, Gaines, D. *, Gould, J. *, Kristensson, P.O. The Impact of Word, Multiple Word, and Sentence Input on Virtual Keyboard Decoding Performance. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2018)*. Acceptance rate: 26% [\[PDF\]](#)
- [24] Walker, J. *, Li, B. *, **Vertanen, K.**, Kuhl, S. Efficient Typing on a Visually Occluded Physical Keyboard. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2017)*, 5457-5461. Acceptance rate: 25% [\[PDF\]](#)
- [25] **Vertanen, K.**, Memmi, H. *, Emge, J. *, Reyas, S. *, Kristensson, P.O. VelociTap: Investigating Fast Mobile Text Entry using Sentence-Based Decoding of Touchscreen Keyboard Input. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2015)*, 659-668. **Best paper**. Acceptance rate: 23% [\[PDF\]](#)
- [26] Kristensson, P.O., **Vertanen, K.** The Inviscid Text Entry Rate and its Application as a Grand Goal for Mobile Text Entry. In *Proceedings of the ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI 2014)*, 335-338. Acceptance rate: 21% [\[PDF\]](#)
- [27] Rough, D. *, **Vertanen, K.**, Kristensson, P.O. An Evaluation of Dasher with a High-Performance Language Model as a Gaze Communication Method. In *Proceedings of the ACM International Working Conference on Advanced Visual Interfaces (AVI 2014)*, 169-176. Acceptance rate: 28% [\[PDF\]](#)
- [28] Weir, D. *, Pohl, H., Rogers, S., **Vertanen, K.**, Kristensson, P.O. Uncertain Text Entry on Mobile Devices. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2014)*, 2307-2316. Acceptance rate: 23% [\[PDF\]](#)
- [29] **Vertanen, K.**, Kristensson, P.O. Complementing Text Entry Evaluations with a Composition Task. *ACM Transactions on Computer-Human Interaction (TOCHI 2014)*, 21(2): Article 8, 33 pages. Acceptance rate: 17% [\[PDF\]](#)
- [30] Oulasvirta, A., Reichel, A., Li, W., Zhang, Y., Bachnynskyi, M., **Vertanen, K.**, Kristensson, P.O. Improving Two-thumb Text Entry on Touchscreen Devices. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2013)*, 2765-2774. Acceptance rate: 20% [\[PDF\]](#)
- [31] Trinh, H. *, Waller, A., **Vertanen, K.**, Kristensson, P.O., Hanson, V.L. iSCAN: A Phoneme-based Predictive Communication Aid for Nonspeaking Individuals. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2012)*, 57-64. **Best student paper**. Acceptance rate: 28% [\[PDF\]](#)
- [32] **Vertanen, K.**, Kristensson, P.O. Spelling as a Complementary Strategy for Speech Recognition. In *Proceedings of the International Conference on Spoken Language Processing (Interspeech 2012)*, 2291-2294. Acceptance rate: 52% [\[PDF\]](#)

- [33] Kristensson, P.O., **Vertanen, K.** The Potential of Dwell-Free Eye-Typing for Fast Assistive Gaze Communication. In *Proceedings of the ACM Symposium on Eye-Tracking Research and Applications (ETRA 2012)*, 241-244. **Best paper honorable mention.** Acceptance rate (short papers): 65% [[PDF](#)]
- [34] Kristensson, P.O., **Vertanen, K.** Performance Comparisons of Phrase Sets and Presentation Styles for Text Entry Evaluations. In *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2012)*, 29-32. Acceptance rate: 23% [[PDF](#)]
- [35] Kristensson, P.O., **Vertanen, K.** Asynchronous Multimodal Text Entry using Speech and Gesture Keyboards. In *Proceedings of the International Conference on Spoken Language Processing (Interspeech 2011)*, 581-584. Acceptance rate: 58% [[PDF](#)]
- [36] **Vertanen, K.**, Kristensson, P.O. The Imagination of Crowds: Conversational AAC Language Modeling using Crowdsourcing and Large Data Sources. In *Proceedings of the ACL Conference on Empirical Methods in Natural Language Processing (EMNLP 2011)*, 700-711. Acceptance rate: 23% [[PDF](#)]
- [37] **Vertanen, K.**, Kristensson, P.O. A Versatile Dataset for Text Entry Evaluations Based on Genuine Mobile Emails. In *Proceedings of the ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI 2011)*, 295-298. Acceptance rate (short papers): 18% [[PDF](#)]
- [38] **Vertanen, K.**, Kristensson, P.O. Getting it Right the Second Time: Recognition of Spoken Corrections. In *Proceedings of the IEEE Workshop on Spoken Language Technology (SLT 2010)*, 277-282. Acceptance rate: 52% [[PDF](#)]
- [39] **Vertanen, K.**, Kristensson, P.O. Intelligently Aiding Human-Guided Correction of Speech Recognition. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2010)*, 1698-1701. Acceptance rate: 25% [[PDF](#)]
- [40] **Vertanen, K.**, MacKay, D.J.C. Speech Dasher: Fast Writing using Speech and Gaze. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2010)*, 595-598. Acceptance rate: 22% [[PDF](#)]
- [41] **Vertanen, K.**, Kristensson, P.O. Automatic Selection of Recognition Errors by Respeaking the Intended Text. In *Proceedings of the IEEE Workshop on Automatic Speech Recognition and Understanding (ASRU 2009)*, 130-135. Acceptance rate: 42% [[PDF](#)]
- [42] **Vertanen, K.**, Kristensson, P.O. Recognition and Correction of Voice Web Search Queries. In *Proceedings of the International Conference on Spoken Language Processing (Interspeech 2009)*, 1863-1866. Acceptance rate: 58% [[PDF](#)]
- [43] **Vertanen, K.**, Kristensson, P.O. Parakeet: A Continuous Speech Recognition System for Mobile Touch-Screen Devices. In *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2009)*, 237-246. Acceptance rate: 25% [[PDF](#)]
- [44] **Vertanen, K.**, Kristensson, P.O. On the Benefits of Confidence Visualization in Speech Recognition. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2008)*, 1497-1500. Acceptance rate: 22% [[PDF](#)]
- [45] **Vertanen, K.** Combining Open Vocabulary Recognition and Word Confusion Networks. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICAASP 2008)*, 4325-4328. Acceptance rate: 50% [[PDF](#)]

- [46] **Vertanen, K.** Speech and Speech Recognition during Dictation Corrections. In *Proceedings of the International Conference on Spoken Language Processing (Interspeech 2006)*, 1890-1893. Acceptance rate: 64% [\[PDF\]](#)
- [47] Hollermann, L., Hsu, T., Lopez, D., **Vertanen, K.** Scheduling Problems in a Practical Allocation Model. *Journal of Combinatorial Optimization* (1997), 129-149.

WORKSHOP, POSTER & DEMO PUBLICATIONS (PEER REVIEWED)

- [48] Frisch, B.* , Wade, W., Gaines, D., Kinsella, M., Peters, B., Broderick, T., **Vertanen, K.** It's Complicated: On the Design and Evaluation of AI-Powered AAC Interfaces. In *Workshop on Speech AI for All: The What, How, and Who of Measurement (CHI 2026, workshop)*.
- [49] Frisch, B.* , **Vertanen, K.** Adapting Design Workshops for Autistic Adults. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2025, poster)*. Acceptance rate: 66% [\[PDF\]](#)
- [50] Memmott, T., Gaines, D.* , Lawhead, M., Klee, D., **Vertanen, K.** 2025. Simulated Online Typing Performance in a cBCI using Different Language Models. In *Proceedings of the 11th International BCI Meeting (BCI Society 2025)*. [\[PDF\]](#)
- [51] Frisch, B.* , **Vertanen, K.** Refining Participatory Design for AAC Users. In *Workshop on Access InContext: Futuring Accessible Prototyping Tools and Methods (CHI 2025, workshop)*. [\[PDF\]](#)
- [52] Gaines, D.* , **Vertanen, K.** 2023. Using a Pre-trained Neural Language Model to Make Character Predictions for Brain-Computer Interfaces. In *Proceedings of the 10th International BCI Meeting (BCI Society 2023)*. [\[PDF\]](#)
- [53] **Vertanen, K.**, Kristensson, P.O. A Dataset of Noisy Typing on QWERTY Keyboards. In *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2023, open science track)*. [\[PDF\]](#)
- [54] Nowrin, S.* , Ordóñez, P., **Vertanen, K.** Exploring Motor-impaired Programmers' Use of Speech Recognition. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2022, poster)*. Acceptance rate: 59% [\[PDF\]](#)
- [55] Gonzalez Penuela, R.E., Vermette, P., Yan, Z., Zhang, C., **Vertanen, K.**, Azenkot, S. Understanding How People with Visual Impairments Take Selfies. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2022, poster)*. Acceptance rate: 59% [\[PDF\]](#)
- [56] Reynolds, J.* , Kuhl, S., **Vertanen, K.** A Comparison of Table, Wall, and Midair Mixed Reality Keyboard Locations. In *MobileHCI 2022 Workshop on Shaping Text Entry Research for 2030*. [\[PDF\]](#)
- [57] Gaines, D.* , **Vertanen, K.** A Phrase Dataset with Difficulty Ratings Under Simulated Touchscreen Input. In *MobileHCI 2022 Workshop on Shaping Text Entry Research for 2030*. [\[PDF\]](#)
- [58] Adhikary, J.* , Isom, M.* , **Vertanen, K.** The Impact of Number of Predictions on User Performance in a Dwell Keyboard. In *MobileHCI 2022 Workshop on Shaping Text Entry Research for 2030*. [\[PDF\]](#)
- [59] Bonaker, N.* , Nel, E.M., **Vertanen, K.**, Broderick, T. Demonstrating Nomon: A Flexible Interface for Noisy Single-Switch Users. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2022, interactivity)*. **Best demo runner-up**. [\[PDF\]](#)
- [60] Adhikary, J.* , Watling, R.* , Fletcher, C.* , Stanage, A.* , **Vertanen, K.** Investigating Speech Recognition for Improving Predictive AAC. In *Proceedings of the Workshop on Speech and*

Language Processing for Assistive Technologies (SLPAT 2019, workshop). [\[PDF\]](#)

- [61] **Vertanen, K.** Towards Improving Predictive AAC using Crowdsourced Dialogues and Partner Context. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2017, poster)*, 347-348. [\[PDF\]](#)
- [62] **Vertanen, K.** Towards Fluid Speech-based Text Interaction. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2017, workshop)*. [\[PDF\]](#)
- [63] **Vertanen, K.**, Dunlop, M., Bi, X., Montague, K., Arif, A.S., Azenkot, S. Ubiquitous Text Interaction. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2017, workshop proposal)*. Acceptance rate: 45% [\[PDF\]](#)
- [64] **Vertanen, K.** Counting Fingers: Eyes-Free Text Entry without Touch Location. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2016, workshop)*. [\[PDF\]](#)
- [65] Walker, J. *, Kuhl, S., **Vertanen, K.** Decoder-Assisted Typing using an HMD and a Physical Keyboard. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2016, workshop)*. [\[PDF\]](#)
- [66] **Vertanen, K.**, Dunlop, M., Clawson, J., Kristensson, P.O., Arif, A.S. Inviscid Text Entry and Beyond. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2016, workshop proposal)*. Acceptance rate: 45% [\[PDF\]](#)
- [67] **Vertanen, K.**, MacKay, D.J.C. Speech Dasher: A Demonstration of Text Input Using Speech and Approximate Pointing. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2014, demo)*, 353-354. [\[PDF\]](#)
- [68] Trinh, H., Waller, A., **Vertanen, K.**, Kristensson, P.O., Hanson, V.L. Phoneme-based Predictive Text Entry Interface. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2014, demo)*, 351-352. [\[PDF\]](#)
- [69] **Vertanen, K.**, Emge, J. *, Memmi, H. *, Kristensson, P.O. Text Blaster: A Multi-Player Touchscreen Typing Game. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2014, demo)*, 379-382. [\[PDF\]](#)
- [70] Clawson, J., Brewster, S., Dunlop, M., Kristensson, P.O., Isokoski, P., Oulasvirta, A., **Vertanen, K.**, Waller A. The Usability of Text Entry Systems Now and in the Future. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2014, special interest group proposal)*, 1139-1142. [\[PDF\]](#)
- [71] **Vertanen, K.**, Memmi, H. *, Kristensson, P.O. The Feasibility of Eyes-Free Touchscreen Keyboard Typing. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2013, poster)*, Article No. 69. Acceptance rate: 60% [\[PDF\]](#)
- [72] **Vertanen, K.** A Collection of Conversational AAC-like Communications. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2013, poster)*, Article No. 31. Acceptance rate: 60% [\[PDF\]](#)
- [73] Reyal, S. *, **Vertanen, K.**, Kristensson, P.O. Developing Efficient Text Entry Methods for the Sinhalese Language. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2013, workshop)*. [\[PDF\]](#)

- [74] Kristensson, P.O., Brewster, S., Clawson, J., Dunlop, M., Findlater, L., Isokoski, P., Martin, B., Oulasvirta, A., **Vertanen, K.**, Waller, A. Grand Challenges in Text Entry. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2013, workshop proposal)*, 3315-3318. Acceptance rate: 40% [\[PDF\]](#)
- [75] Trinh, H.* , Waller, A., **Vertanen, K.**, Kristensson, P.O., Hanson, V.L. Applying Prediction Techniques to Phoneme-based AAC Systems. In *Proceedings of the Workshop on Speech and Language Processing for Assistive Technologies (SLPAT 2012)*, 19-27. Acceptance rate: 62% [\[PDF\]](#)
- [76] Kristensson, P.O., Clawson, J., Dunlop, M., Isokoski, P., Roark, B., **Vertanen, K.**, Waller, A., Wobbrock, J. Designing and Evaluating Text Entry Methods. In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2012, workshop proposal)*, 2747-2750. Acceptance rate: 62% [\[PDF\]](#)
- [77] **Vertanen, K.**, Kristensson, P.O. Parakeet: A Demonstration of Speech Recognition on a Mobile Touch-Screen Device. In *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI 2009, demo)*, 483-484. [\[PDF\]](#)

BOOK CHAPTERS

- [78] Gaines, D.* , Dudley, J., Kristensson, P.O., **Vertanen, K.** Statistical Keyboard Decoding. In *Bayesian Methods for Interaction and Design (2022)*, 188-211.
- [79] **Vertanen, K.** Probabilistic Text Entry—Case Study 3. In *Intelligent Computing for Interactive System Design: Statistics, Digital Signal Processing, and Machine Learning in Practice (2021)*, 277–320.

THESES

- [80] **Vertanen, K.** Efficient Correction Interfaces for Speech Recognition. Ph.D. thesis (2009), University of Cambridge. [\[PDF\]](#)
- [81] **Vertanen, K.** Efficient Computer Interfaces using Continuous Gestures, Language Models, and Speech. M.Phil. thesis (2004), University of Cambridge. [\[PDF\]](#)
- [82] **Vertanen, K.** A Parallel Implementation of a Fluid Flow Simulation using Smoothed Particle Hydrodynamics. Master’s thesis (1999), Oregon State University. [\[PDF\]](#)

PREPRINTS & TECH REPORTS (NOT PEER REVIEWED)

- [83] Frisch, B.* , Peters, B., **Vertanen, K.** The Role of AAC in Social Communication and Community Engagement: Experiences and Opinions of Autistic Adults. [\[arXiv\]](#)
- [84] Schmitz, C.* , Reynolds, J.* , Kuhl, S., **Vertanen, K.** Exploring Keyboard Positioning and Ten-Finger Typing in Mixed Reality. [\[arXiv\]](#)
- [85] **Vertanen, K.** Baseline WSJ Acoustic Models for HTK and Sphinx: Training Recipes and Recognition Experiments. Technical report (2006), Cavendish Laboratory. [\[PDF\]](#)

PATENTS

- [86] Kristensson, P.O., Mjelde, M., **Vertanen, K.** Gaze based text input systems and methods. U.S. Patent 10,551,915 (2020).
- [87] Kristensson, P.O., Mjelde, M., **Vertanen, K.** Gaze based text input systems and methods. U.S. Patent 10,082,864 (2018).

AWARDS

Best demo runner-up, CHI 2022 (coauthor)

Demonstrating Nomon: A Flexible Interface for Noisy Single-Switch Users.

Best paper, CHI 2015 (first author)

VelociTap: Investigating Fast Mobile Text Entry using Sentence-Based Decoding of Touchscreen Keyboard Input.

Best journal paper nominee, TVCG 2021 (coauthor)

Text Entry in Virtual Environments using Speech and a Midair Keyboard.

Best student paper, ASSETS 2012 (coauthor)

iSCAN: A Phoneme-based Predictive Communication Aid for Nonspeaking Individuals.

Best paper honorable mention, ETRA 2012 (coauthor)

The Potential of Dwell-Free Eye-Typing for Fast Assistive Gaze Communication.

NSF CAREER Award, 2018

Google Faculty Research Award, 2016

Institute of Computing and Cybersystems Achievement Award, Michigan Tech, 2018

Distinguished Researcher Award, Montana Tech, 2014

Excellent remote instruction (19 excellent ratings), Spring 2020

Exceptional instructor evaluation, Michigan Tech: Spring 2019, Spring 2018, Spring 2017, Spring 2016

PROFESSIONAL ACTIVITIES

Associate editor:

- International Journal of Human Computer Studies (2014–2019)

Subcommittee chair:

- CHI: ACM International Conference on Human Factors in Computing Systems (2020, 2021)

Associate chair:

- CHI: ACM International Conference on Human Factors in Computing Systems (2017, 2018, 2019, 2026)
- IUI: International Conference on Intelligent User Interfaces (2015)
- MobileHCI: ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (2014)

Program committee:

- ASSETS: ACM SIGACCESS Conference on Computers and Accessibility (2018, 2019, 2020, 2025, 2026)
- IUI: International Conference on Intelligent User Interfaces (2014)
- SLPAT: Workshop on Speech and Language Processing for Assistive Tech. (2012, 2013, 2019)
- MobileHCI: ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (2011)
- CHI Workshop on Text Entry (2012, 2013, 2016, 2017)
- BCS-HCI: British Computer Society Conference on Human-Computer Interaction (2010)

Workshop organizer:

- 11th Annual International BCI Meeting, Personalization of Communication BCIs (2025)
- 10th Annual International BCI Meeting, Examining Alternative Keyboards and Language Modeling Software for Message Generation by BCI End-users (2023)

Summer school instructor:

- ACM SIGCHI summer school, Write a Paper for CHI 2021, IIT Bombay (2019)
- ACM SIGCHI summer school, Computational Interaction, University of Cambridge (2018)
- ACM SIGCHI summer school, Research Methods and Approaches to Text Entry and Other Interaction Techniques, IIT Bombay (2018)

Doctoral consortium co-chair:

- ASSETS: ACM SIGACCESS Conference on Computers and Accessibility (2018)

Vice-president:

- SIG-SLPAT, Speech and Language Processing for Assistive Technologies (2015–16)

Student research competition judge:

- ASSETS: ACM SIGACCESS Conference on Computers and Accessibility (2014)

Grant reviewing:

- NSF CISE panelist (2025)
- NSF CISE panelist (2022)
- NSF CISE panelist (2021), 2 panels
- NSF CISE panelist (2020), 2 panels
- NSF CISE panelist (2019)
- NSF CISE panelist (2018)
- NSF CISE ad hoc reviewer (2024)

Journal article reviewing:

- TOCHI: ACM Transactions on Computer-Human Interaction (2017, 2018, 2019, 2021, 2023)
- International Journal of Human Computer Studies (2016)
- IEEE Transactions on Human-Machine Systems (2015, 2025)
- IEEE Pervasive Computing (2017)
- Computer Speech and Language (2012)
- Transactions on Visualization and Computer Graphics (2020)
- International Journal of Human-Computer Interaction (2025)

Conference paper reviewing:

- ACL Rolling Review (February 2025 cycle)
- CHI: ACM International Conference on Human Factors in Computing Systems (2010, 2011, 2012, 2013, 2014, 2015, 2016, 2022, 2025)
- ISMAR: International Symposium on Mixed and Augmented Reality (2024, 2025)
- IUI: International Conference on Intelligent User Interfaces (2012, 2013, 2017)
- UIST: ACM Symposium on User Interface Software and Technology (2012, 2013, 2016, 2017, 2020)

- MobileHCI: ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (2013, 2015, 2016, 2017)
- IEEEVR: IEEE Conference on Virtual Reality and 3D User Interfaces (2020, 2021)
- SLPAT: Workshop on Speech and Language Processing for Assistive Technologies (2022)
- NordiCHI: Nordic Conference on Human-Computer Interaction (2012)
- ICASSP: IEEE International Conference on Acoustics, Speech, and Signal Processing (2011)
- ICMI: ACM International Conference on Multimodal Interaction (2013)
- BCS-HCI: British Computer Society Conference on Human Computer Interaction (2009)

INVITED TALKS

“Evolution of Text Input in the Last 20 Years”, IIT Bombay ACM SIGCHI Student Chapter, March 2024.

“Language Modeling and Predictive Text Entry for AAC”, International Society for Augmentative and Alternative Communication (ISAAC masterclass), August 2021.

“The Feasibility of Eyes-Free Touchscreen Keyboard Typing”, Department of Computer Science, University of Washington, October 2013.

“Efficient Correction Interfaces for Speech Recognition”, School of Computer Science, University of St Andrews, June 2013.

“Efficient Correction Interfaces for Speech Recognition”, MIT Computer Science and Artificial Intelligence Lab, May 2010.

“Efficient Correction Interfaces for Speech Recognition”, Google, April 2010.