

CURRICULUM VITAE

Alexandria K. Vail

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Human-Computer Interaction Institute
Pittsburgh, PA 15213-3815

Education

- 2016 – **Ph.D.**, Human-Computer Interaction
Carnegie Mellon University
Advisor: Dr. Louis-Philippe Morency
Thesis:
*Multimodal and Dyadic Modeling of Client-Therapist Interaction:
An Interpretable and Causal Strategy*
- 2015 – 2016 Ph.D. Student, Computer Science
North Carolina State University
Advisors: Dr. Kristy Boyer, Dr. James Lester
- 2011 – 2015 **B.S.**, Computer Science, **B.S.**, Mathematics, *magna cum laude*, 3.6/4.0
North Carolina State University
- Minor concentrations: Cognitive Science, Physics
Phi Kappa Phi, Sigma Pi Sigma
University Honors, Computer Science Honors, Mathematics Honors

Research Experience

- 2016 – **Graduate Research Assistant**, Human-Computer Interaction Institute
Carnegie Mellon University
The MultiComp Lab
- 2015 – 2016 **Graduate Research Assistant**, Center for Educational Informatics
North Carolina State University
The LearnDialogue Group, The Intellimedia Group
- 2013 – 2015 **Undergraduate Researcher**, Center for Educational Informatics
North Carolina State University
The LearnDialogue Group

Research Interests

AFFECTIVE COMPUTING, ARTIFICIAL INTELLIGENCE, HEALTH BEHAVIOR INFORMATICS, LEARNING TECHNOLOGIES

- AFFECTIVE COMPUTING: affective interfaces, cognitive-affective models, emotion and affect recognition, social signal processing
- ARTIFICIAL INTELLIGENCE: user modeling, multimodal behavior analysis
- HEALTH BEHAVIOR INFORMATICS: AI & healthcare, diagnostic support tools, technology in psychiatry
- LEARNING TECHNOLOGIES: AI & education, intelligent tutoring systems, tutorial interaction

Honors and Awards

- Outstanding Paper, Twenty-Fourth International Conference on User Modeling, Adaptation, and Personalization, 2016.
- Exemplary Paper, Ninth International Conference on Educational Data Mining, 2016.
- Best Paper Award, Twenty-Third International Conference on User Modeling, Adaptation, and Personalization, 2015.
- National Science Foundation Graduate Research Fellowship, 2015.
- North Carolina State University Department of Computer Science Senior Award for Scholarly Achievement, 2015.
- Generation Google Scholarship, 2014.
- North Carolina Society of Information Management Scholarship, 2013, 2014.
- Howard A. Petrea Endowed Scholarship in Mathematics, 2013.

Journal Publications

1. J. Girard*, **A. Vail***, E. Liebenthal, K. Brown, C. Kilciksiz, L. Pennant, E. Liebson, D. Öngür, L.-P. Morency, J. Baker. Computational Analysis of Spoken Language in Acute Psychosis and Mania. *Schizophrenia Research*, 2021. (*equal contribution)

Conference Publications

2. **A. Vail**, J. Girard, L. Bylsma, J. Cohn, J. Fournier, H. Swartz, L.-P. Morency. Toward Causal Understanding of Therapist-Client Relationships: A Study of Language Modality and Social Entrainment. *Proceedings of the Twenty-Fourth International Conference on Multimodal Interaction (ICMI 2022)*, Bangalore, India, 2022. (long paper)
3. **A. Vail**, J. Girard, L. Bylsma, J. Cohn, J. Fournier, H. Swartz, L.-P. Morency. Goals, Tasks, and Bonds: Toward the Computational Assessment of Therapist Versus Client Perception of Working Alliance. *Proceedings of the Sixteenth International Conference on Automatic Face and Gesture Recognition (FG 2021)*, Jodhpur, India, 2021. (long paper)
4. **A. Vail**, T. Baltrušaitis, L. Pennant, E. Liebson, J. Baker, L.-P. Morency. Visual Attention in Schizophrenia: Eye Contact and Gaze Aversion during Clinical Interactions. *Proceedings of the Seventh International Conference on Affective Computing and Intelligent Interaction (ACII 2017)*, pp. 490-497, San Antonio, Texas, 2017. (long paper, acceptance rate: 27.6%)
5. **A. Vail**, J. Grafsgaard, K. Boyer, E. Wiebe, and J. Lester. Gender Differences in Facial Expressions of Affect During Learning. *Proceedings of the Twenty-Fourth International Conference on User Modeling, Adaptation, and Personalization (UMAP 2016)*, pp. 65–73, Halifax, Canada, 2016. (long paper, acceptance rate: 23.9%)
Outstanding Paper
6. **A. Vail**, J. Wiggins, J. Grafsgaard, K. Boyer, E. Wiebe, and J. Lester. The Affective Impact of Tutor Questions: Predicting Frustration and Engagement. *Proceedings of the Ninth International Conference on Educational Data Mining (EDM 2016)*, pp. 247–254, Raleigh, North Carolina, 2016. (long paper, acceptance rate: 27.5%)
Exemplary Paper
7. W. Min, J. Wiggins, L. Pezzullo, **A. Vail**, K. Boyer, B. Mott, M. Frankosky, E. Wiebe, and J. Lester. Predicting Dialogue Acts for Intelligent Virtual Agents with Multimodal Student Interaction Data. *Proceedings of the Ninth International Conference on Educational Data Mining (EDM 2016)*, pp. 454–459, Raleigh, North Carolina, 2016. (short paper, acceptance rate: 52%)

8. **A. Vail**, J. Grafsgaard, K. Boyer, E. Wiebe, and J. Lester. Predicting Learning from Student Affective Response to Tutor Questions. *Proceedings of the Thirteenth International Conference on Intelligent Tutoring Systems (ITS 2016)*, pp. 154–164, Zagreb, Croatia, 2016. (long paper, acceptance rate: 15%)
9. **A. Vail**, K. Boyer, E. Wiebe, and J. Lester. The Mars and Venus Effect: The Influence of User Gender on the Effectiveness of Adaptive Task Support. *Proceedings of the Twenty-Third International Conference on User Modeling, Adaptation, and Personalization (UMAP 2015)*, pp. 216–227, Dublin, Ireland, 2015. (long paper, acceptance rate: 28%)
Best Paper Award
10. **A. Vail**, J. Grafsgaard, J. Wiggins, J. Lester, and K. Boyer. Predicting Learning and Engagement in Tutorial Dialogue: A Personality-Based Model. *Proceedings of the Sixteenth ACM International Conference on Multimodal Interaction (ICMI 2014)*, pp. 255–262, Istanbul, Turkey, 2014. (long paper, acceptance rate: 18%)
11. J. Grafsgaard, J. Wiggins, **A. Vail**, K. Boyer, E. Wiebe, and J. Lester. The Additive Value of Multimodal Features for Predicting Engagement, Frustration, and Learning During Tutoring. *Proceedings of the Sixteenth ACM International Conference on Multimodal Interaction (ICMI 2014)*, pp. 42–49, Istanbul, Turkey, 2014. (long paper, acceptance rate: 18%)
Nominated for Outstanding Paper Award
12. **A. Vail** and K. Boyer. Adapting to Personality Over Time: Examining the Effectiveness of Dialogue Policy Progressions in Task-Oriented Interaction. *Proceedings of the Fifteenth Annual Meeting of the Special Interest Group on Discourse and Dialogue (SIGDIAL 2014)*, pp. 41–50, Philadelphia, Pennsylvania, 2014. (long paper, acceptance rate: 30%)
13. **A. Vail** and K. Boyer. Identifying Effective Moves in Tutoring: On the Refinement of Dialogue Act Annotation Schemes. *Proceedings of the Twelfth International Conference on Intelligent Tutoring Systems (ITS 2014)*, pp. 199–209, Honolulu, Hawaii, 2014. (long paper, acceptance rate: 17.5%)

Teaching Experience

2021	Graduate Teaching Assistant , Carnegie Mellon University Human-Computer Interaction Institute
	Spring 2021 05-610: User-Centered Research and Evaluation Dr. Raelin Musuraca and Dr. Motahhare Eslami ~90 students
2019	Graduate Teaching Assistant , Carnegie Mellon University Language Technologies Institute
	Spring 2019 11-776: Multimodal Affective Computing Dr. Louis-Philippe Morency ~30 students

- 2013 – 2014 **Teaching Assistant**, North Carolina State University
 Department of Computer Science
- Fall 2013 CSC 226: Discrete Mathematics for Computer Scientists
 Dr. Tiffany Barnes
 ~250 students
- Spring 2014 CSC 230: C and Software Tools
 Dr. Sarah Heckman
 ~120 students
- 2012 – 2013 **Mathematics & Physics Tutor**, North Carolina State University
 College Reading & Learning Association: Level II Advanced Tutor Certification

Relevant Coursework

Graduate Coursework

Spoken Dialogue Systems	Artificial Intelligence I, II
Computational Applied Logic	Combinatorics I
Software Engineering	Graph Theory
Numerical Analysis I	Automated Learning and Data Analysis
Reasoning Under Uncertainty	Human Communication and Multimodal
Process and Theory in HCI	Computation
Computer Science Perspectives in HCI	Advanced Multimodal Machine Learning
Social Perspectives in HCI	Computer Vision
Design Perspectives in HCI	Data Visualization
Cognitive Science Perspectives in HCI	Experimental Design for Behavioral and
Interaction Design Overview	Social Sciences

Undergraduate Coursework

Computer Organization and Assembly	Foundations of Advanced Mathematics
Language for Computer Scientists	Calculus I, II, III
C and Software Tools	Applied Differential Equations I
Concepts and Facilities of Operating	Introduction to Linear Algebra
Systems for Computer Scientists	Introduction to Modern Algebra for
Data Structures	Mathematicians
Automata, Grammars, and Computability	Introduction to Combinatorics
Ethics in Computing	Probability and Statistics for Engineers
Introduction to Artificial Intelligence	Mathematical Analysis I, II
Technology & American Culture	Mathematics of Scientific Computing
The Creative Process in Science	Symbolic Logic
Self, Schooling, & Social Order	Introduction to Language & Linguistics
Introduction to College Tutoring	Introduction to Cognitive Science
	Introduction to Psychology
	Cognitive Processes

Professional Membership

- Association for Computing Machinery (ACM).
- Association for the Advancement of Affective Computing (AAAC).
- International Artificial Intelligence in Education Society (IAIED).
- Institute of Electrical and Electronics Engineers (IEEE).
- International Educational Data Mining Society (IEDMS).
- Students & Technology in Academia, Research, and Service (STARS) Student Leadership Corps.