

# CURRICULUM VITAE

Alexandria K. Vail

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Human-Computer Interaction Institute  
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## Education

- 2016 – **Ph.D.**, Human-Computer Interaction  
Carnegie Mellon University  
Advisor: Dr. Louis-Philippe Morency
- 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

### 2021

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

### 2017

2. **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%)

### 2016

3. **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**
4. **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**
5. 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%)
6. **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%)

## 2015

7. **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**

## 2014

8. **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%)
9. 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**

10. **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%)
11. **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	<b>Graduate Teaching Assistant</b> , 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	<b>Graduate Teaching Assistant</b> , Carnegie Mellon University Language Technologies Institute
Spring 2019	11-776: Multimodal Affective Computing Dr. Louis-Philippe Morency ~30 students
2013 – 2014	<b>Teaching Assistant</b> , 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	<b>Mathematics &amp; Physics Tutor</b> , North Carolina State University College Reading & Learning Association: Level II Advanced Tutor Certification

## Relevant Coursework

### Graduate Coursework

Spoken Dialogue Systems  
Computational Applied Logic  
Software Engineering  
Numerical Analysis I  
Reasoning Under Uncertainty  
Process and Theory in HCI  
Computer Science Perspectives in HCI  
Social Perspectives in HCI  
Design Perspectives in HCI  
Cognitive Science Perspectives in HCI  
Interaction Design Overview

Artificial Intelligence I, II  
Combinatorics I  
Graph Theory  
Automated Learning and Data Analysis  
Human Communication and Multimodal  
Computation  
Advanced Multimodal Machine Learning  
Computer Vision  
Data Visualization  
Experimental Design for Behavioral and  
Social Sciences

### Undergraduate Coursework

Computer Organization and Assembly  
Language for Computer Scientists  
C and Software Tools  
Concepts and Facilities of Operating  
Systems for Computer Scientists  
Data Structures  
Automata, Grammars, and Computability  
Ethics in Computing  
Introduction to Artificial Intelligence  
  
Technology & American Culture  
The Creative Process in Science  
Self, Schooling, & Social Order  
Introduction to College Tutoring

Foundations of Advanced Mathematics  
Calculus I, II, III  
Applied Differential Equations I  
Introduction to Linear Algebra  
Introduction to Modern Algebra for  
Mathematicians  
Introduction to Combinatorics  
Probability and Statistics for Engineers  
Mathematical Analysis I, II  
Mathematics of Scientific Computing  
Symbolic Logic  
  
Introduction to Language & Linguistics  
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.
- Mensa International.