

Angela E.B. Stewart
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Education & Professional Positions

Carnegie Mellon University
Human-Computer Interaction Institute
Postdoctoral Fellow (August 2020 - Present)
Advisor: Amy Ogan

University of Colorado Boulder
Department of Computer Science and Institute of Cognitive Science
Ph.D. in Computer Science (Graduated July 2020)
Advisor: Sidney K. D'Mello

University of Notre Dame
Department of Computer Science
PhD Student in Computer Science (August 2015 – August 2017)
Advisor: Sidney K. D'Mello

Auburn University
Department of Computer Science and Software Engineering
Bachelor of Software Engineering (Graduated May 2015)
Summa Cum Laude

Awards

- 2020** Best Paper
10th International Conference on Learning Analytics and Knowledge
- 2019** Best Student Paper
21st ACM International Conference on Multimodal Interaction
- 2018** Distinguished Student Speaker
University of Colorado Boulder Department of Computer Science Colloquia
- 2017** Best Student Paper
10th International Conference on Educational Data Mining
- 2015** Student Symposium First Place Winner
Lexmark International

Publications

Journal Articles and Conference Publications (Full Paper) - Strictly Peer Reviewed

1. Chen Sun, Valerie J. Shute, **Angela E.B. Stewart**, Quinton Beck-White, Caroline Reinhardt, Nicholas D. Duran, Sidney K. D'Mello. The relationship between collaborative problem solving processes and objective outcomes in a game-based learning environment. In review for Computers in Human Behavior.

2. **Angela E.B. Stewart**, Arjun Ramesh Rao, Amanda Michaels, Chen Sun, Valerie J. Shute, Nicholas D. Duran, Sidney K. D'Mello. CoachCPS: The design and implementation of intelligent collaborative problem solving feedback. In review for Proceedings of the 24th ACM Conference on Computer-Supported Cooperative Work and Social Computing, CSCW '21.
3. Jaemarie Solyst, Tara Nkrumah, **Angela E.B. Stewart**, Jina Lee, Erin Walker, Amy Ogan. Understanding instructors' cultivation of connectedness in K-12 online synchronous culturally responsive STEM and computing education. In review for Proceedings of the 24th ACM Conference on Computer-Supported Cooperative Work and Social Computing, CSCW '21.
4. Samuel Pugh, Shree Krishna Subburaj, Arjun Ramesh Rao, **Angela E.B. Stewart**, Jessica Andrews-Todd, and Sidney K. D'Mello. Say what? Automatic modeling of collaborative problem solving skills from student speech in the wild. Proceedings of the Fourteenth International Conference on Educational Data Mining, EDM '21. (AR¹ = 22%)
5. **Angela E.B. Stewart**, Zachary Keirn, and Sidney K. D'Mello. Multimodal modeling of collaborative problem solving in triads. User Modeling and User Adapted Interaction, 2021. (IF² = 4.68)
6. Shree Krishna Subburaj, **Angela E.B. Stewart**, Arjun Ramesh Rao, Sidney K. D'Mello. Multimodal, multiparty modeling of collaborative problem solving performance. In Proceedings of the 2020 International Conference on Multimodal Interaction, ICMI ' 20. (AR = 41%)
7. **Angela E.B. Stewart**, Mary J. Amon, Nicholas D. Duran, and Sidney K. D'Mello. Beyond team makeup: Diversity in teams predicts valued outcomes in computer-mediated collaborations. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, CHI '20. (AR = 24%)
8. Hana Vrzakova, Mary J. Amon, **Angela E.B. Stewart**, Nicholas D. Duran, and Sidney K. D'Mello. Focused or stuck together: Multimodal patterns reveal triads' performance in collaborative problem solving. In Proceedings of the 10th International Conference on Learning Analytics and Knowledge, LAK '20. (**Best Paper**, AR = 31%)
9. **Angela E.B. Stewart**, Hana Vrzakova, Chen Sun, Jade Yonehiro, Cathlyn A. Stone, Nicholas D. Duran, Valerie J. Shute, and Sidney K. D'Mello. I say, you say, we say: Using spoken language to model socio-cognitive processes during computer-supported collaborative problem solving. In Proceedings of the 22nd ACM Conference on Computer-Supported Cooperative Work and Social Computing, CSCW '19. (AR = 31%)
10. Lucca Eloy, **Angela E.B. Stewart**, Mary J. Amon, Caroline Reinhardt, Amanda Michaels, Chen Sun, Valerie J. Shute, Nicholas D. Duran, and Sidney K. D'Mello. Modeling team-level multimodal dynamics during multiparty collaboration. In Proceedings of the 21st ACM International Conference on Multimodal Interaction, ICMI '19. (**Best Student Paper**, AR = 22%)
11. Hana Vrzakova, Mary J. Amon, **Angela E. B. Stewart**, and Sidney K. D'Mello. Dynamics of visual attention in multiparty collaborative problem solving using multidimensional recurrence quantification analysis. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, CHI '19. (AR = 24%)
12. Chen Sun, Valerie J Shute, **Angela E.B. Stewart**, Jade Yonehiro, Nicholas D. Duran, and Sidney K. D'Mello. A generalized competency model of collaborative problem solving. Computers and Education 2019. (IF = 5.30)
13. **Angela E.B. Stewart**, Zachary A. Keirn, and Sidney K. D'Mello. Multimodal modeling of coordination and coregulation patterns in speech rate during triadic collaborative

¹ When applicable, acceptance rate (AR) of the conference is indicated.

² When applicable, Impact Factor (IF) of the journal is indicated.

- problem solving. In Proceedings of the 20th ACM International Conference on Multimodal Interaction, ICMI '18. (AR = 15.4%)
14. **Angela E.B. Stewart** and Sidney K. D'Mello. Connecting the dots towards collaborative AIED: Linking group makeup to process to learning. In Proceedings of the 19th International Conference on Artificial Intelligence in Education, AIED '18. (AR = 25%)
 15. **Angela E.B. Stewart**, Nigel Bosch, and Sidney K. D'Mello. Generalizability of face-based mind wandering detection across task contexts. In Proceedings of the 10th International Conference on Educational Data Mining, EDM '17. (**Best Student Paper**, AR = 25%)
 16. **Angela E.B. Stewart**, Nigel Bosch, Huili Chen, Patrick Donnelly, and Sidney K. D'Mello. Face forward: Detecting mind wandering from video during narrative film comprehension. In Proceedings of the 18th International Conference on Artificial Intelligence in Education, AIED '17. (AR = 30%)

Conference Publications (Short Paper, Extended Abstract) - Strictly Peer Reviewed

17. **Angela E.B. Stewart**, Jaemarie Solyst, Amanda Buddemeyer, Leshell Hatley, Sharon Henderson-Singer, Kimberly Scott, Erin Walker and Amy Ogan. Explaining engagement: Learner behaviors in a virtual coding camp. In press for Proceedings of the 22nd International Conference on Artificial Intelligence in Education.
18. Stephen Hutt, Jessica Hardey, Robert Bixler, **Angela E.B. Stewart**, Evan Risko, and Sidney K. DMello. Gaze-based detection of mind wandering during lecture viewing. In Proceedings of the 10th International Conference on Educational Data Mining, EDM '17. (AR = 42%)
19. **Angela E.B. Stewart**, Nigel Bosch, Huili Chen, Patrick J. Donnelly, and Sidney K. D'Mello. Where's your mind at? Video-based mind wandering detection during film viewing. In Proceedings of the 2016 Conference on User Modeling Adaptation and Personalization, UMAP '16. (AR = 41%)

Workshop and Symposia Proceedings - Peer Reviewed

20. Sidney K. D'Mello, **Angela E.B. Stewart**, Mary J. Amon, Chen Sun, Nicholas D. Duran, Valerie J. Shute. Towards dynamic intelligent support for collaborative problem solving. Approaches and Challenges in Team Tutoring Workshop at the 20th International Conference on Artificial Intelligence in Education, AIED '19.

Talks

2020 Human-Computer Interaction Institute Seminar Series, Carnegie Mellon University

Invited Panelist, Blacks in Technology YP CoNext@ASU

Invited Talk, MIRRORLab Student Speaker Series

2018 Department of Computer Science Colloquia, University of Colorado Boulder

Poster Presentations

1. **Angela E.B. Stewart**, Hana Vrzakova, Chen Sun, Jade Yonehiro, Cathlyn Adele Stone, Nicholas D. Duran, Valerie J. Shute, and Sidney K. D'Mello. I say, you say, we say: Using language to model shared knowledge construction during collaborative problem solving. Computing Research Association Grad Cohort for Underrepresented Minorities and People with Disabilities, CRA-URMD '19.

2. **Angela E.B. Stewart**, Nigel Bosch, and Sidney K. D’Mello. Detecting mind wandering during film viewing. Tapia Celebration of Diversity in Computing, Tapia ’17.
3. **Angela E.B. Stewart**, Nigel Bosch, Huili Chen, Patrick J. Donnelly, and Sidney K. D’Mello. Video-based mind wandering detection during film viewing. Computing Research Association Grad Cohort for Women, CRA-W ’17.

Teaching Experience

- 2019** Nonlinear Dynamics: Mathematical and Computational Approaches
Teaching Assistant
Sante Fe Institute
- 2018** Nonlinear Dynamics: Mathematical and Computational Approaches
Course Instructor
Sante Fe Institute
- 2017** Data Structures
Teaching Assistant; taught two lab sections
University of Colorado at Boulder

Funding

- 2019** SIGCHI Student Travel Grants
\$1,800
Association for Computing Machinery – Special Interest Group Computer-Human Interaction
Travel Funding
- Departmental Conference Scholarship
\$1,200
University of Colorado at Boulder Computer Science Department
Travel Funding
- CRA Grad Cohort Workshop for URMD
\$1,000
Computing Research Association
Travel Funding
- 2018** 19th International Conference on Artificial Intelligence in Education
\$1,500
AIED Society
Travel Funding
- 2017** Deans Graduate Assistantship
\$21,800
University of Colorado Boulder
Graduate School Funding
- Computer Science Departmental Fellowship
\$3,000
University of Colorado Boulder

Graduate School Funding

18th International Conference on Artificial Intelligence in Education

10th International Conference on Educational Data Mining

\$1,500

AIED Society/EDM Society

Travel Funding

CRA-Women Grad Cohort Workshop

\$1,000

Computing Research Association

Travel Funding

Tapia Celebration of Diversity in Computing

\$1,000

National Science Foundation

Travel Funding

2016 CRA-Women Grad Cohort Workshop

\$1,000

Computing Research Association

Travel Funding

Tapia Celebration of Diversity in Computing

\$1,000

IBM

Travel Funding

Dean's Fellowship

\$95,400

University of Notre Dame

Graduate School Funding

GEM Fellowship

\$40,000

National GEM Consortium

Graduate School Funding

Conference Organization

2021 Equitable Learning Analytics Panel Co-Organizer, Learning Analytics and Knowledge

Learning Analytics and Knowledge Workshop Co-Chair

Learning Analytics and Knowledge Program Committee

Learning at Scale Program Committee

Artificial Intelligence in Education Program Committee

2020 Artificial Intelligence in Education Program Committee

Educational Data Mining Program Committee

International Conference on Multimodal Interaction Program Committee

2019 International Conference on Multimodal Interaction Program Committee

2018 International Conference on Multimodal Interaction Local Committee

2017 Educational Data Mining Programming Committee

Reviews

Computer-Supported Cooperative Work and Social Computing, 2021

Educational Data Mining 2019, 2018

Artificial Intelligence in Education 2019, 2018, 2017

Transactions on Learning Technologies, 2019

British Journal of Educational Technology, 2020

Computers & Education 2020

Journal of Learning Analytics, 2020

Service

2020 - Society for Learning Analytics Research Diversity and Inclusion Working Group

2021

2018 - Aucitac Board of Directors

2021

2019 - Colorado STEM Academy Science Fair Judge

2020

2019 University of Colorado Boulder Girls Who Code Co-Facilitator

2018 - The Coding School AI and Machine Learning Curriculum Lead

2019

2016 - University of Notre Dame Computer Science Outreach Instructor

2017

The Coding School Core Curriculum Developer

University of Notre Dame Black Graduate Student Association Treasurer

2016 University of Notre Dame Expanding Your Horizons Workshop Co-Organizer

Northern Indiana Regional Science Engineering Fair Judge

2015 - Saint Joseph Public Library Web Development Teacher

2016

2014 - Auburn University National Society of Black Engineers Pre-College Initiatives Chair
2015

Auburn University National Society of Black Engineers Elementary School STEM Tutor

2014 Auburn University National Society of Black Engineers A Walk for Education

Professional Memberships

International Artificial Intelligence in Education Society

Association for Computing Machinery

Association for Computing Machinery - SIG-CHI

Association for Computing Machinery – Women

Mentorship (Graduate Students)

2020 Arjun Rao, Multimodal Machine Learning for Collaborative Problem Solving

Krishna Subburaj, Multimodal Machine Learning for Collaborative Problem Solving

2019 Ashwin Vasan, Multimodal Machine Learning for Collaborative Problem Solving

2018 - Lucca Eloy, Nonlinear Dynamics for Collaborative Problem Solving

2019

Mentorship (Undergraduate Students)

2021 Jennifer Nwogu

Stephanie Eristoff

Vaishnavi Gorantla

2020 - Jina Lee

2021 Daniel Noh

2019 - Cooper Steputis

2020 Erin Clark

2018 - Caroline Reinhardt

2020 Amanda Michaels

2017 - David Blair

2019

2017 Samantha Scaglione

2016 Mae Raab

Eugene Choi

Industry Experience

2016 Lexmark International

User Experience Design Intern

Designed and evaluated aspects of a user-facing device management portal, including a scoped and global search mechanic.

2015 Lexmark International

Firmware Engineering Intern

Designed and implemented test cases for firmware's conformance to network protocols.