Christopher Flathmann

Curriculum Vitae

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Education

2019–2022 **PhD, Human Centered Computing**, *Clemson University, Clemson, South Carolina*.
Advisor: **Nathan McNeese**

2018 **BS Computer Science**, *GPA: 3.89*, *Clemson University, Clemson, South Carolina*.

Work Experience

2019–Present **Clemson University** Graduate Research Assistant, **Team Research Analytics in Computational Environments (TRACE)**. Senior Lead PhD student researching human-AI teamwork, specifically the trade off of influence between humans and AI systems in the coming years.

2018 **Clemson University** Undergraduate Research Assistant, **Data Intensive Computing Ecosystems Lab**. Researched the effects of latency on high performance computing clusters in commercial cloud environments.

2018 **Amazon** Software Development Engineer Intern, Financial Technology. Created and evaluated a system for email matching payments and responses for financial collections using AWS EC2, S3, and Lambda.

2017 **Clemson University** Undergraduate Teaching Assistant for Algorithms and Data Structures in C++ for **Dr. Brian Dean.** Taught labs, held office hours for undergraduate students, and helped design and proctor programming exams.

2017 **Michelin** Software Development Engineer Intern for Research and Development. Designed software in C# to manage Agile Teams' members, software responsibilities, and skills.

Funding and Awards

2019 - 2020 NSF/NRT **Technology-Human Integrated Knowledge Education and Research** Fellow

2019 Clemson **Three Minute Thesis** Finalist for the College of Computing, Engineering, and Applied Science

2017 DuPont Undergraduate Project of the Year: Smart Aiding Application for Travel Safety

Research Interests

Human-Centered Artificial Intelligence, Human-Machine Influence, Applied Human-Machine Teamwork, Ethical Design of AI

Current Funding Project

Clemson University Teacher Learning Progression

Collaborators: Nathan McNeese, Bart Knijenberg, Reza Anaraky, CU Education Department

- Researching, designing, and implementing an intelligent recommender system with the goal of guiding and aiding in the professional development of South Carolina middle school teachers. Main responsibilities include analyzing survey data and building the recommendation platform.

Relevant Coursework

- Artificial Intelligence
- The Science of Teamwork and Technology
- Measurement and Evaluation of Human Centered Computing Systems
- Human Perceptions and Behaviors
- Research Methods for Human Centered Computing
- Applied Data Science
- Digital and Smart Manufacturing

Publications

Conference Papers

[C.8] **Christopher Flathmann**, Beau Schelble, Rui Zhang, and Nathan McNeese. 2021 (Accepted). Modeling and Guiding the Creation of Ethical Human-AI Teams. In *Proceedings of the 4th AAAI/ACM Conference on AI, Ethics, and Society*

[C.7] Beau Schelble, **Christopher Flathmann**, Lorenzo-Barberis Canonico, and Nathan McNeese. 2020. Understanding Human-AI Cooperation Through Game-Theory and Reinforcement Learning Models. In *Proceedings of the 53rd Hawaii international conference on system sciences. Nominated for Best Paper*

[C.6] **Christopher Flathmann**, Beau Schelble, Brock Tubre, Nathan McNeese, and Paige Rodeghero. 2020. Invoking Principles of Groupware to Develop and Evaluate Present and Future Human-Agent Teams. In *Proceedings of the 8th International Conference on Human-Agent Interaction. Awarded Best Paper*

[C.5] Beau Schelble, **Christopher Flathmann**, and Nathan McNeese. 2020. Towards Meaningfully Integrating Human-Autonomy Teaming in Applied Settings. In *Proceedings of the 8th International Conference on Human-Agent Interaction.*

[C.4] Geoff Musick, Divine Maloney, **Christopher Flathmann**, Nathan McNeese, and Jamiahus Walton. 2020. Differentiated Instruction further Realized through Teacher-Agent Teaming. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting.*

[C.3] **Christopher Flathmann**, Nathan McNeese, and Lorenzo Barberis Canonico. 2019. Using Human-Agent Teams to Purposefully Design Multi-Agent Systems. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 1425–1429. https://doi.org/10.1177%2F1071181319631238

[C.2] Lorenzo Barberis Canonico, **Christopher Flathmann**, and Nathan McNeese. 2019. Collectively intelligent teams: Integrating team cognition, collective intelligence, and ai for future teaming. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 1466–1470. https://doi.org/10.1177%2F1071181319631278

[C.1] Lorenzo Barberis Canonico, **Christopher Flathmann**, and Nathan McNeese. 2019. The wisdom of the market: Using human factors to design prediction markets for collective intelligence. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 1471–1475. https://doi.org/10.1177%2F1071181319631282

Research Posters

[P.2] **Christopher Flathmann**, Beau Schelble, and Nathan McNeese. 2020. Creating Human-Oriented Multi-Agent Teams. In *Insights @ BMW Manufacturing Co. LLC.*, 12 September 2019

[P.1] **Christopher Flathmann** and Nathan McNeese. 2020. Using Human-Agent Teams to Purposefully Design Multi-Agent Teams. *Clemson 2019 Research Symposium*, 12 April 2019

Grant and Award Contribution

As the senior Ph.D. student in TRACE Research Group, I have had the opportunity to contribute heavily contribute and lead the writing of multiple grant and funding opportunities.

Funded Considerations of Ethical and Unethical Behavior on Trust in Human-Autonomy Teaming. AFOSR. **$586,538**

Funded Promoting Human Interpretation and Interaction to Mitigate Bias in Artificial Intelligence Assisted Decision Aids. ONR. **$444,368**

Under Review The Spread of Trust and Distrust in Distributed Human-Autonomy Teaming Constellations. AFOSR. **$1,302,657**

Teaching Experience

Courses Taught

Guest Lecturer for HCC 8500: The Science of Teamwork and Technology (Spring 2021)
Graduate Assistant Lecturer for AMFG 6200: Collaboration and Teamwork in Manufactoring Systems (Fall 2020)

Student Mentoring

THINKER Mentor Program
Steven Russell- BS Computer Science, *Clemson University, Fall 2020 - Present*

TRACE Research Group

Casey Hird- BS Math, *Clemson University,Fall 2019 - Spring 2020*
Dylan Cathapermal- BS Computer Science, *Clemson University, Fall 2019 - Present*

Skills

Programming	Python, C#, SQL, Java, C++, R, JavaScript
Tools	Tensorflow, Tensorforce, GitHub, AWS, Node.js, Qualitrics
Research	Quantitative Analysis, Qualitative Analysis, Focus Groups, Wizard of Oz, Experiment Design, Reinforcement Learning

Professional Activities

Reviewing
Journals
Human Factors, since 2020
Transactions on Human-Robot Interaction, since 2021
Conferences
ACM Computer Supported Cooperative Work, since 2020
Human Factors and Ergonomics Society Annual Meeting (HFES), since 2020
Winter Simulations Conference (WSC), since 2020
Military Health System Research Symposium (MHSRS), since 2020

Professional Community/National Service
Presenter, National Research Traineeship, "Contributing to the NRT Structure and Content"