MILKA TRAJKOVA CURRICULUM VITAE

trajkovamilka@gmail.com | https://milkatrajkova.com

RESEARCH AREAS

- Human-Computer Interaction
- Human-Centered Artificial Intelligence
- Dance Technology
- Dance Education
- Co-Creative AI
- Augmented Feedback
- Remote Learning

EDUCATION

2016 - 2021 **Indiana University**
Indianapolis, Indiana
Ph.D., Informatics
Dissertation: aiDance: Designing AI-Based Feedback for Ballet Assessment and Learning
Specialization in Human-Computer Interaction (HCI)
Minor: Learning Science, Bloomington, Indiana
Advisor: Francesco Cafaro
Committee: Brian Magerko, Davide Bolchini, Lynn Dombrowski, John Toenjes, Judi Fusco, Daniel Hickey

2014 - 2016 **Indiana University**
Indianapolis, Indiana
M.S., Human-Computer Interaction
Advisor: Francesco Cafaro
Master Thesis: Effect of Visual and Verbal Feedback on Ballet Dance Performance in Mirrored and Non-Mirrored Environments

2011 - 2014 **South East European University**
Skopje, Macedonia
B.S., Information Systems and Management
Advisor: Mexhid Ferati
Baccalaureate thesis Usability Evaluation of a Kinect-Based System for Ballet

APPOINTMENTS

2022 - Present
Research Scientist
Expressive Machinery Lab
Georgia Institute of Technology
Atlanta, GA
PI: Brian Magerko
Conduct research in the area of designing a co-creative agent for improvisational dance and be lead scientist in NSF-M3X grant (2123597) and NSF-DRL grant (2214463)

2022 - 2024
Adjunct Instructor
Luddy School of Informatics
Indiana University
Indianapolis

2016 - 2021
Graduate Research Assistant
Indiana University
Indianapolis, Indiana
Data to Action (DATA) Lab
Advisor: Francesco Cafaro
Conduct research in the area of embodied interaction design and be lead Ph.D. researcher in an NSF-EAGER grant (1848898)

2014 - 2016
Graduate Research Assistant
Indiana University
Indianapolis, Indiana
Advisor: Anthony Faiola
Conduct research on the design and development of tools for use in hospital intensive care unit; Conduct rapid ethnography at various hospitals in Indianapolis.

AWARDS

2024 Best Talk, Post-Doctoral Research Symposium, Georgia Institute of Technology
2022 Oracle Research Grant, *$1,000*
2021 Special Recognition for Outstanding Reviews DIS 2021
2020 CHI Doctoral Consortium Travel Award, *$1,000*
2019 Elsevier Reviewer Recognition Award
2019 NSF Cyberlearning Graduate Fellow

2019 IU Graduate and Professional Education Grant, *$2,000*

2018 Ubicomp Travel Grant, *$2,000*

2017 IU Graduate and Professional Education Grant, *$2,000*

2016 Indiana University-Purdue University Indianapolis Ph.D. Informatics Fellowship, *$197,500*

2016 School of Informatics and Computing Travel Scholarship to attend 2016 Richard Tapia Conference

2015 Best Graduate Poster at ACM-W Indiana Celebration of Women in Computing, Indianapolis, Indiana

2015 ACM-W Celebration Scholarship to attend 2015 Grace Hopper Conference

2015 School of Informatics and Computing Travel Scholarship to attend 2015 Grace Hopper Conference

2014 Indiana University-Purdue University Indianapolis (IUPUI) MS Informatics Fellowship, *$20,000*

GRANTS

2024 National Center of Neuromodulation for Rehabilitation (NC NM4R) at the Medical University of South Carolina. *Movement-associated transcutaneous vagus nerve stimulation and responsiveness testing for personalized rehabilitation.* PI: Minoru Shinohara, PhD, Biological Sciences (Georgia Tech). Co-PIs:
Hyeokhyen Kwon, Ph.D., School of Medicine, (Emory University), **Milka Trajkova, PhD., School of Literature, Media & Communication (Georgia Tech)**, *$37,500*
Role: Co-PI and co-author of proposal.

2023 Institute of People and Technology (iPAT)/ Institute for Data Engineering and Science (IDEaS). Georgia Institute of Technology. *Data-Driven Platform for Transforming Subjective Assessment into Objective Processes for Artistic Human Performance and Wellness.* **PI: Milka Trajkova, School of Literature, Media, and Communication;** Brian Magerko, professor, School of Literature, Media, and Communication, *$15,000*
Role: Co-PI and co-author of proposal.

2022 McCamish Parkinson's Disease Innovation Program: *Blue Sky Receipts. On-Skin Wearable tVNS System with AI-Powered Motion Classification for PD Rehabilitation.* PI: Minoru Shinohara, PhD, Biological Sciences (Georgia Tech). Co-PIs: Woon-Hong Yeo, PhD., Mechanical Engineering (Georgia Tech); Brian Magerko, PhD, School of Literature, Media & Communication (Georgia Tech); **Milka Trajkova, PhD., School of Literature, Media & Communication (Georgia Tech)**, *$40,000*
Role: Co-PI and co-author of proposal.

PUBLICATIONS

Under Preparation

Trajkova, M., Cafaro. F., & Magerko, B. aiDance: How Do We Quantify a Plie Using AI?
Trajkova, M., & Knowlton, A. Designing a Movement Taxonomy for Improvisational AI Agents.

Refereed Journal Papers

2024 **Trajkova, M.**, Green, N., & Shinohara, M. (2024). 'StreamPoseML'An End-to-End Open-Source Web Application and Python Toolkit for Real-Time Video Pose Classification and Machine Learning. Journal of Open Source Software, 9(104), 6392.

2020 **Trajkova, M.**, Cafaro, F., Vedak, S., Mallappa, R., & Kankara, S. R. (2020). Exploring Casual COVID19 Data Visualizations on Twitter: Topics and Challenges. In Informatics (Vol. 7, No. 3, p. 35). Multidisciplinary Digital Publishing Institute.

2018 **Trajkova, M.,** & Cafaro, F. (2018). Takes Tutu to Ballet: Designing Visual and Verbal Feedback for Augmented Mirrors. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 2(1), 38. *(27% acceptance rate)*

Refereed Conference Papers

2024 Zhang, C., Cocking, C., **Trajkova, M**., Mock, Z., Tate, G., Monden, C., Magerko, B. (2024) Fostering AI Literacy with LuminAI through Embodiment and Creativity in Informal Learning Spaces. In Proceedings of the 16th Conference on Creativity & Cognition (C&C '24). Association for Computing Machinery, New York, NY, USA, 476–481.

2024 **Trajkova, M.,** Long, D., Deshpande, M., Knowlton, A., & Magerko, B. (2024, May). Exploring Collaborative Movement Improvisation Towards the Design of LuminAI—a Co-Creative AI Dance Partner. In Proceedings of the CHI Conference on Human Factors in Computing Systems (pp. 1-22).

2023 Deshpande, M., **Trajkova, M.,** Knowlton, A., & Magerko, B. (2023, June). Observable Creative Sense-Making (OCSM): A Method For Quantifying Improvisational Co-Creative Interaction. In Proceedings of the 15th Conference on Creativity and Cognition (pp. 103-115).

2021 **Trajkova, M.** & Cafaro, F. (2021). Current Use, Non-Use, and Future Use of Ballet Learning Technologies.

In Designing Interactive Systems Conference 2021 (DIS '21), June 28-July 2, 2021, Virtual Event, USA. ACM, New York, NY, USA, 25 pages. https://doi.org/10.1145/3461778.3462107 *(24% acceptance rate)*

2021 Alhakamy, A., **Trajkova, M.,** & Cafaro, F. (2021) Show Me How You Interact, I Will Tell You What You Think: Exploring the Effect of the Interaction Style on Users' Sensemaking about Correlation and Causation in Data. In Designing Interactive Systems Conference 2021 (DIS '21), June 28-July 2, 2021, Virtual Event, USA. ACM, New York, NY, USA, 19 pages. https://doi.org/10.1145/ 3461778.3462083 *(24% acceptance rate)*

2020 Alhakamy, A., Cafaro, F., **Trajkova, M.,** Kankara,S., Mallappa, R., & Vedak, S. (2020, July). Design Strategies and Optimizations for Human-Data Interaction Systems in Museums. In Proceedings of IEEE 20th International Conference on Advanced Learning Technologies (ICALT).

2020 **Trajkova, M.** (2020). Designing AI-Based Feedback for Ballet Learning. In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems Extended Abstracts (pp. 1-9). *(23.8% acceptance rate)*

2020 **Trajkova, M.,** & Martin-Hammond, A. (2020). " Alexa is a Toy": Exploring Older Adults' Reasons for Using, Limiting, and Abandoning Echo. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-13). **(24% acceptance rate)**

(170+ citations)

2020 **Trajkova, M.,** Alhakamy, A. A., Cafaro, F., Mallappa, R., & Kankara, S. R. (2020). Move Your Body: Engaging Museum Visitors with Human-Data Interaction. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-13). *(24% acceptance rate)*

2019 **Trajkova, M.** (2019). Towards AI-Enhanced Ballet Learning. In Proceedings of the 6th International Conference on Movement and Computing (pp. 1-5).

2019 **Trajkova, M.,** Cafaro, F., & Dombrowski, L. (2019). Designing for Ballet Classes: Identifying and Mitigating Communication Challenges Between Dancers and Teachers. In Proceedings of the 2019 on Designing Interactive Systems Conference. *(25% acceptance rate)*

2019 Cafaro, F., **Trajkova, M.**, & Alhakamy, A. A. (2019, June). Designing embodied interactions for informal learning: two open research challenges. In Proceedings of the 8th ACM International Symposium on Pervasive Displays (pp. 1-2).

2019 Cafaro, F., **Trajkova, M.**, & Alhakamy, A. (2019). Designing Embodied Interactions for Informal Learning: Two Open Research Challenges. In Proceedings of the 8th ACM International Symposium on Pervasive Displays (PerDis).

2016 **Trajkova, M.,** & Cafaro, F. (2016). E-ballet: designing for remote ballet learning. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct (pp. 213-216). ACM. *(26% acceptance rate)*

2015 **Trajkova, M.,** & Ferati, M. (2015). Usability Evaluation of Kinect-Based System for Ballet

Movements. In Design, User Experience, and Usability: Users and Interactions (pp. 464-472). Springer International Publishing.

Refereed Posters

2015 **Trajkova, M.,** Ferati, M. (2015) Shatter the Mirror: Usability Evaluation of Kinect-Based System for Ballet Movements, Super Mirror (SM). ACM-W Indiana Celebration of Women in Computing, Indianapolis, Indiana

Refereed Demos

2023 **Trajkova, M.,** Deshpande, M., Knowlton, A., Monden, C., Long, D., & Magerko, B. (2023). AI Meets Holographic Pepper's Ghost: A Co-Creative Public Dance Experience. In Designing Interactive Systems Conference (pp. 274-278).

Workshops

2024 Transforming Performance Athletics: AI's Role in Elevating Training, Promoting Wellness, and Decoding Artistry. Georgia Institute of Technology. ***Organizer***. https://sites.gatech.edu/artisticaiperformance/

2020 Matuk, C., Amato, A., DesPortes, K., Tes, M., Vasudevan, V., Yoon, S., ...**Trajkova, M** & Urbanowicz, R. (2020). Data Literacy for Social Justice. In Proceedings of International Conference for the Learning Sciences (ICLS).

Panels

2022 **Trajkova, M.,** & Knowlton, A. (2022). Adapting the Unspoken: Improvisational Influences on Co-Creative Artificial Intelligence. National Dance Education Organization. Atlanta, GA.

2023 **Trajkova, M.,** Magerko, B., Crawford, J., Topal-Sümer, O., Matychak, N. (2023). Emerging Technologies in Dance From Studio to Stage and Beyond. Dance USA. Atlanta, GA.

INDUSTRY EXPERIENCE

2015 **User Experience (UX) Research Intern**
iVote
Skopje, Macedonia
Evaluated in-house Epistum Learning Management System by performing expert user

experience (UX) review; Conduct heuristic analysis & cognitive walkthroughs; Recruit and schedule users for usability testing; Create usability test plan and tasks; Conduct usability testing; Provide UX advice across all platforms; Write-up report analysis and presentation of the evaluation of the systems to the board and CEO; Asked to stay on-board and train employees on UX.

TEACHING EXPERIENCE

2022-2024	FA23: Introduction to Research in Informatics Luddy School of Informatics, Indiana University, Indianapolis
2016	FA16: Introduction to Informatics, with Prof. Francesco Cafaro Luddy School of Informatics, Indiana University, Indianapolis

INVITED TALKS

2024	How Can AI Revolutionize Dance Education?. What Data Can Do for You: Data-Driven Opportunities in Dance Education. National Dance Education Organization. Oakland University, Rochester, MI.
2023	Data-Driven Dance Education. Embodied Cognition and Dance Workshop. Merrimack College. Andover, MA.
2023	Adapting the Unspoken: Designing an Improvisational Co-Creative AI Dance Partner. Computer Museum of America. Roswell, GA.
2022	How AI is Disrupting the Sports Industry. Nvidia. GTC.
2022	aiDance. Digital Media Seminar. Georgia Institute of Technology
2022	Adapting the Unspoken: Designing an Improvisational Co-Creative AI Dance Partner. National Dance Education Organization. Atlanta, GA.
2021	Current Use, Non-Use, and Future Use of Ballet Learning Technologies. DIS ’21. Online.
2020	Improving Dance Technique with Advanced Technology. Digital Dance Submit ’20. (See Interview: https://www.facebook.com/watch/?v=883554918835741).
2020	Designing AI-Based Feedback for Ballet Learning. Doctoral Consortium at CHI ’20.
2019	Towards AI-Enhanced Ballet Learning. NSF Cyberlearning meeting – selected as a graduate student ‘buddy’ (https://circlcenter.org/events/cyberlearning-2019/buddies/) in Alexandria, Virginia.
2019	Designing for Ballet Classes: Identifying and Mitigating Communication Challenges Between Dancers and Teachers. DIS ’19.
2019	Towards AI-Enhanced Ballet Learning. CHI Pre-PC at Indiana University, Bloomington,

Indiana.

2018 An Approach to an AI-Enhanced Ballet Experience. Selected as part of Human-Computer Interaction Consortium '18 at Pajaro Dunes, Watsonville, CA.

2018 Takes Tutu to Ballet: Designing Visual and Verbal Feedback for Augmented Mirrors. Brown Bag Talk at Indiana University, Indianapolis.

INVITED DEMOS

2023 LuminAI. AvantSouth Conference. Atlanta, GA.

2023 LuminAI. Digital Media Demo Day. Georgia Tech. Atlanta, GA.

2023 LuminAI. Computer Museum of America. Roswell, GA

2022 LuminAI. GVU. Georgia Tech. Atlanta, GA.

2022 LuminAI. National Dance Education Organization. Atlanta, GA.

INVITED TECHNICAL COMMITTEE MEMBER

2024 SportsHCI Conference http://sportshci.com/

2021 International Conference on Virtual and Augmented Reality Simulations - http://www.icvars.org/com.html

2021 International Conference on Advances in Computer-Human Interactions - https://www.iaria.org/conferences2021/ACHI21.html

SERVICE

2024 Associate Chair (AC) on Special Topics at CHI (2024)

2019 Automaticity Session Chair at DIS (2019)

2021 Committee chair for Works in Progress at TEI (2021)

2020 Program Committee (PC) meeting assistant at CHI (2020)

Reviewer

ACM Conference on Human Factors in Computing Systems (CHI) (2017) (2019) (2020) (2021) (2022) (2023) (2024)
ACM Journal on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) (2018)
ACM Conference on Tangible, Embedded and Embodied Interaction (TEI) (2019) (2021) (2022)
ACM Conference on Designing Interactive Systems (DIS) (2019) (2021) (2022) (2023) (2024)
Elsevier Computers and Education (2020)

Volunteer

2020	CHI Student Volunteer
2019	DIS Student Volunteer
2019	MOCO Student Volunteer
2018	Ubicomp Student Volunteer
2018 – Present	ACM Member
2017 – 2020	Graduate Professional and Student Government Representative
2014 – 2016	Graduate Council Representative - Women In Technology (WiT) Student Organization
2012 – Present	UX Consultant - United Macedonian Diaspora

Student Mentoring

Georgia Institute of Technology

Cassandra Monden, B.S. - Research Scientist
Chelsi Cocking, Ph.D. - Digital Media
Gemma Tate, Ph.D. - Digital Media
Chengzhi Zhang, Ph.D. - Digital Media
Manoj Deshpande, Ph.D. - Digital Media
Jasmine Kaur, M.S. - Digital Media
Jonathan Moon, M.S. - Human Computer Interaction
Iyer, Ramya, B.S. - Digital Media
Imani Mooketsane, B.S. - Aerospace Engineering
Marie Ow, B.S. - Digital Media
Edward Hamilton, B.S. - Business Administration
Harshi Brahmbhatt, B.S. - Physics
Katelynn Nguyen, B.S. - Computer Science
Koki Asahina, B.S. - Materials Science
Steven Li, B.S. - Computer Science
Yao Xiao, B.S. - Computer Science
Dian Yang, B.S. - Computer Science
Shiyao Shen, B.S. - Computer Science
Neil Kochhar, B.S. - Computer Science

Kennesaw State University

Alexis Young, B.S. - Physical Therapy

Indiana University

Rashmi Mallappa, M.S. - Computer Science
Hinal Kiri, M.S. - Human Computer Interaction
Sanika Vedak, M.S. - Human Computer Interaction
Steffi Gogoi, M.S. - Human Computer Interaction

PRESS

2024	Winners of the 10th Annual Postdoc Research Symposium Announced https://postdocs.gatech.edu/news/winners-10th-annual-postdoc-research-symposium-announced
2024	Teaching AI to collaborate, not merely create, through dance https://techxplore.com/news/2024-06-ai-collaborate.html
2024	LuminAI puts human dancers and AI on the same stage https://www.artsatl.org/luminai-puts-human-dancers-and-ai-on-the-same-stage/
2024	Tech-Infused Tales: Exploring Visual Storytelling. Georgia Institute of Technology. https://iac.gatech.edu/featured-news/2024/01/visual-storytelling
2023	IDEaS Awards 2023 Seed Grants to Seven Interdisciplinary Research Teams. Georgia Institute of Technology. https://research.gatech.edu/ideas-awards-2023-seed-grants-seven-interdisciplinary-research-teams
2023	Avant South showcases use of AI in robotics at Georgia Tech. Atlanta News First. https://www.atlantanewsfirst.com/2023/09/29/avant-south-showcases-use-ai-robotics-georgia-tech/
2023	NI DO TO (Never Again) Team. https://arts.gatech.edu/node/47
2022	GVU at 30. https://gvu.gatech.edu/gvu-30
2022	Blue Sky Grant Recipients. https://parkinsons.gatech.edu/research/blue_sky_research_teams/
2020	5 Mistakes People Make When Sharing COVID-19 Data Visualizations on Twitter. ScienceDaily, ScienMag, EurekaAlert, TechnologyNetworks, Mirage News, Bioengineer.org, Latin American Post
2020	Mistakes in Pandemic Information Sharing on Social Media Revealed: MedIndia

PAPER METRICS

Altmetrics