Jules B. Blanchet (she/her)

PhD Student at Dartmouth College

jules.b.blanchet.gr@dartmouth.edu julesbb.com

EXPERIENCE

PHD Graduate Student **Dartmouth College**
Aug 2019 - Present Hanover, New Hampshire

Research focuses at the intersection of human-computer interaction and physical skill learning in what we call the “Human Motion Project”. We seek to deepen computers’ understanding of human motion and the embodied experience of learning motor skills, developing tools that help us expand our competencies and live more richly in our bodies.

Ongoing work includes (1) expanding the capability of automatic coaches to offer meaningful feedback to motion techniques by incorporating large language models into a dance-learning platform to power an AI dance coach,offering empathetic, personalized feedback, (2) embodying the AI dance coach with a Nao humanoid robot, and (3) integrating multimodal biosensing (ECG, EMG, EEG, and facial affect) into the AI coach, enabling it to better personalize the learning experience and be sensitive to learners’ needs.

Teacher & Computer Science Coordinator **The Winchendon School**
May 2018 - Jun 2019 Winchendon, Massachusetts

Taught 2 sections of algebra-based physics and 2 sections of coding. Redesigned coding classes with units on Javascript, HTML, CSS, p5.js, Arduinos, and Circuitry. Emphasized hands-on learning by creatively developing physics lab exercises at minimal expense. Coached the school's FRC Robotics (Winter) and Ultimate Frisbee (Spring) teams.

Software Developer **Grove**
Sep 2017 - Apr 2018 Somerville, Massachusetts

Spearheaded software development for a Boston startup focused on web connected indoor gardening systems. We built out fundamental infrastructure for our backend (Typescript, Express.js, MongoDB, Docker) & frontend (iOS / Swift), developing APIs that our software uses to interface with partner companies, collaborating with UX on product design (Sketch, Zeplin), and more. The project incorporated IOT, machine learning, mobile apps, and physical tags (RFID), and tied all these together with a delightful, user-centric design.

Software Engineer **Microsoft**
Nov 2015 - Jul 2017 Cambridge, MA

Worked on the Intune Company Portal App for iOS & macOS (Objective-C, Swift). Led an end-to-end initiative for improving our app by incorporating and learning from telemetry, which ultimately led to a 70% reduction in login error rates, improved live-site serviceability, and more-informed feature development (through AB testing). Also made contributions with respect to an app-wide rewrite from Objective-C to Swift, extending our iOS app to support macOS, several new user- flows, threat-modeling and security hardening, bug & crash fixes, and quality improvements

EDUCATION

Doctor of Philosophy
Computer Science
Dartmouth College 2019-present

Bachelor of Arts
High Honors in Computer Science
Minor in Education
Dartmouth College 2011-2015

VOLUNTEERING

Big Brother @ Big Brother Big Sister Foundation, Inc.
Oct. 2017 - Present

Founder @ Dartmouth CoderDojo
Feb. 2012 - Jun. 2015

Volunteer Teacher @ Marshall Islands Ministry of Education
Jan 2014 - Mar 2015

SELECTED COURSEWORK

Graduate
Principles of Robot Design and Programming (COSC 181), Robotics Perception Systems (COSC 169), Multirobot Systems (COSC 269), Machine Learning (COSC 274), Artificial Intelligence (COSC 276), Mobile X (COSC 169), Operations Research (ENGS 103), 3D Digital Modeling (COSC 122) , Computer Animation (COSC 124)

PUBLICATIONS

Enhancing the Educational Potential of Online Movement Videos: A Case Study with TikTok Dance Challenges
Jules Blanchet, Megan E Hillis, Yeongji Lee, Qijia Shao, Xia Zhou, Devin Balkcom, David JM Kraemer. *Under review for the Journal of the Learning Sciences* 2023.

A System for Guiding Non-Dancers through Choreography Learning with Structured Practice and Automatic Feedback
Jules Blanchet, Sixuan Han, Yeongji Lee, Megan E Hillis, Qijia Shao, Xia Zhou, David JM Kraemer, Devin Balkcom. *Under review for the 9th International Conference on Movement and Computing.* 2024.

Integrating a LLM into an Automatic Dance Practice Support System: Breathing Life Into The Virtual Coach
Jules Blanchet, Sixuan Han. In *Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*. 2023.

LearnThatDance: Augmenting TikTok Dance Challenge Videos with an Interactive Practice Support System Powered by Automatically Generated Lesson Plans
Jules Blanchet, Megan E Hillis, Yeongji Lee, Qijia Shao, Xia Zhou, David JM Kraemer, Devin Balkcom. In *Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*. 2023.

Automatic Generation and Teaching of Dance Lessons from Video
Jules Blanchet, Megan E Hillis, Yeongji Lee, Qijia Shao, Xia Zhou, David JM Kraemer, Devin Balkcom. In *HotMobile '23: Proceedings of the 24th International Workshop on Mobile Computing Systems and Applications*. 2023.

Soft Lattice Modules That Behave Independently and Collectively
Luyang Zhao, Yijia Wu, **Jules Blanchet**, Maxine Perroni-Scharf, Xiaonan Huang, Joran Booth, Rebecca Kramer-Bottiglio, Devin Balkcom. In *IEEE Robotics and Automation Letters*. 2022.

Overlapping semantic representations of sign and speech in novice sign language learners
Megan E Hillis, Brianna Aubrey, **Jules Blanchet**, Qijia Shao, Xia Zhou, Devin Balkcom, David JM Kraemer. In *Proceedings of the Annual Meeting of the Cognitive Science Society*. 2022.

Teaching American Sign Language in Mixed Reality
Qijia Shao, Amy Sniffen, **Jules Blanchet**, Megan E Hillis, Xinyu Shi, Themistoklis K Haris, Jason Liu, Jason Lamberton, Melissa Malzkuhn, Lorna C Quandt, James Mahoney, David JM Kraemer, Xia Zhou, Devin Balkcom. In *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*. 2020.