

CURRICULUM VITAE
ELLIOT HU-AU

ASSISTANT PROFESSOR OF COMPUTER SCIENCE EDUCATION
MONTCLAIR STATE UNIVERSITY

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PROFESSIONAL SUMMARY

A dedicated and passionate educator with veteran teaching experience at many levels within education. A published researcher in educational technology who explores novel methods for learning by experimenting with new technologies. An experienced mixed reality creator who has brought apps to the publishing stage (*Meta App Lab*). A thoughtful professional who is aware of social and cultural institutions, histories, and the effects they have on individuals.

ACADEMIC RECORD

Educational Doctorate, 2023
Instructional Technology and Media
Teachers College, Columbia University
New York, New York

Master of Arts, 2017
Instructional Technology and Media
Teachers College, Columbia University
New York, New York

California Single-Subject Teaching Credential, 2005
Physics and Introductory Math
California State University, East Bay
Hayward, California

Bachelor of Arts, 2003
Astrophysics with an Education Minor
University of California, Berkeley
Berkeley, California

TEACHING EXPERIENCE

Montclair State University, NJ

Fall 2023-current

Assistant Professor of Computer Science Education

- Designed syllabus and integrated a *Universal Design for Learning* pedagogy for “Introduction to Python Programming”
- Complete revision of online asynchronous “Java Programming” course
- Teaching “STEM Explorations for Early Childhood Education”

Teachers College, Columbia University

Spring 2018-2023

Instructor

- Designed and created a programming-focused, project-based “VR, AR, MR and Games as Learning Tools” course
- Empowered students in understanding connections between hardware and software (e.g., Unity3D game engine, Apple Xcode, Meta Quest)
- Taught “Development of XR and Games” and “Theory and Programming of Interactive Media I”

Rikers Education Program, Rikers Island, NY

Fall 2017

Teacher – “Game Design

- Developed game design and self-reflection course structure for incarcerated male teenagers using text-based game engine (Twine)
- Partnered with the Columbia School of Social Work and NYCDOJ to bring laptops into the institution for students to use (normally disallowed)

Teachers College Community School, New York, NY

Fall 2016

After-School Program Teacher – “Game Design”

- Developed syllabus, overall course structure, and implemented a game design and computational thinking curriculum for 4th graders using *GameStar Mechanic*.

REALM Charter School, Berkeley, CA**2011-2015***Physics Teacher – 9th Grade*

- Founded a new hands-on science program built upon systems thinking and conceptual physics
- Developed project-based, inquiry curriculum
- Applied for and received \$5000 in STEM-focused grants
- Served as Head of Science Department from 2011-2015.
- Founded and advised the Robotics Club from 2013-2015, competed in UC Berkeley PiE Robots

Berkeley Technology Academy, Berkeley, CA**2010-2011***Physics and Algebra Teacher – 11-12th Grades*

- Developed syllabi and new project-based course structure for Algebra-based remedial math course
- Applied for and received \$3,000 in grants
- Served at-risk and non-traditional youth in the school setting.
- Created an Automotive Design course

Skyline High School, Oakland, CA**2005-2010***Earth Science, Physics, AP Physics Teacher – 9-12th Grades*

- Developed an inquiry-based, project-based curriculum for Earth Science course
- Applied for and received grants worth \$100,000+, including PG&E Solar on a Stick installation
- Served as Faculty Council President from 2008-2010.

PROFESSIONAL EXPERIENCE

HAE Studios – New York, NY**2021-current***Founder, Lead Designer and Developer*

- Independently designed, developed, and published a VR chemistry lab simulation for the Meta App Lab.
- Founded upon instructional design principles and embodied and grounded cognition theories
- Averages ~20 copies sold/month

DREAMS Initiative – Teachers College, Columbia University**Sept 2022-May 2023***VR App and Lesson Developer*

- Managed team of 7 MA students, all VR app developers, designers
- Spearheaded the construction of an VR educational math experience
- Planned local teacher professional development on using VR lessons in schools
- Organized multiple demonstration days for local students to experience XR technology at the college

The Game Research Lab, Teachers College, Columbia University, New York, NY**2016 – 2022***Graduate Assistant*

- Coordinated weekly programs, workshops and 5+ volunteers annually
- Maintained equipment, lab materials, procured new technology
- Mentored and assisted MA students in the design and development of games
- Taught workshops on XR, Unity3D, game design

American Museum of Natural History, New York, NY**Spring 2017***Evaluation Intern*

- Evaluated, designed, and implemented user experience/user interfaces for new learning technologies

- Hands-on public UX evaluations using Microsoft HoloLens, Google Cardboard, and tablet-based AR apps
- User-tested new technologies on museum floor in archaeology, astronomy, and cosmology
- Worked closely with XR developers to solicit and implement feedback from users

Teacher Tinker Bootcamp – Teachers College, Columbia University
Aug 2016
Virtual Reality Expert

- Designed and implemented 3-day professional development on innovative learning technologies to local NYC teachers
- Led multiple 1 hour hands-on sessions on VR, AR, and coding for local teachers

Center for Technology and School Change, New York, NY
Fall 2015
Professional Development Intern

- Designed and implemented professional development workshops centered around *Understanding by Design*
- Coordinated and managed professional developments for local NYC teachers and teachers from Bulgaria

PUBLICATIONS AND PAPERS

Hu-Au, E., Addla, P., Harinarayanan, J. Wei, Z., Wu, C., Liu, Z. Y., Danoff, M. *Novel Behaviors of Youth in a Virtual Reality Chemistry Lab.* (2023). Proceedings of the 2023 9th International Conference of the Immersive Learning Research Network. Online and San Luis Obispo, USA, May 18-20, June 26-29, 2023. Immersive Learning Research Network.

Hu-Au, E. & Okita, S. (2021). *Exploring Differences in Student Learning and Behavior Between Real-life and Virtual Reality Chemistry Laboratories.* Journal of Science Education & Technology, 1-15. <https://doi.org/10.1007/s10956-021-09925-0>

Lee, J. J. & Hu-Au, E. (2021). *E3XR: An Analytical Framework for Ethical, Educational and Eudaimonic XR Design.* Frontiers in Virtual Reality. <https://doi.org/10.3389/frvir.2021.697667>

Hu-Au, E. & Okita, S. (2020, June 19-23). *Exploring Differences in Student Learning and Behavior between Real-Life and Virtual Reality Chemistry Laboratory Experiments. The International Conference of the Learning Sciences, Nashville, TN.* <https://icls2020.org/>

Hu-Au, E. & Lee, J. J. (2017). *Virtual Reality and Education: A Tool for the Experience Age.* International Journal for Innovation in Education, 4(4), 215-226.

Hu-Au, E. (2018). *Virtual Reality for Education.* Website. <http://www.virtualrealityforeducation.com>

PRESENTATIONS

XR in the Workplace
August 2023

IEEE Learning Engineering Corporate Special Interest Group

Novel Behaviors of Youth in a Virtual Reality Chemistry Lab
June 2023

Immersive Learning and Research Network Conference 2023

Virtual Reality and Education
April 14-15, 2023

Teachers College China Society

Games as Ways to Bring Us Together
March 2022

Sliding Doors: Teachers College, Columbia University

VR/AR and the Future of Education
TIZ EdTech

Feb 2022

Exploring Differences in Student Learning and Behavior between Real-Life and Virtual Reality Chemistry Laboratory Experiments
AERA 2020 Poster Presentation

April 2020

PORTFOLIO

<http://ehuaa.my.canva.site>

Examples of my work in virtual reality, augmented reality, 3D modeling and printing.
Work done by my students is also included.

COMMERCIAL APPLICATIONS

The VR Chemistry Lab – Meta App Lab – Independently designed, developed, and successfully published a VR app for simulating science laboratory experiences and interacting with the microscopic world (500+ downloads) -
<https://www.meta.com/experiences/3919613214752680/>

Nov 2021

AWARDS

The Campbell Award

2023

- Recognition by the University Trustees and the Board of the Columbia Alumni Association for exceptional leadership and Columbia spirit.
- Recognition for my service to Teachers College in promoting its name through multiple public events, serving on the Provost Selection Committee, and hosting numerous events for TC Student Affairs.
- Awarded annually to a single graduate at each School associated with Columbia University.

Shirley Chisholm Trailblazer Award

2022

- Annual award given to a Teachers College student who makes a significant contribution to school culture.
- Recognized for involvement with multiple clubs and for presentations to the TC Board of Trustees on behalf of the Student-Parent Club and innovative educational technology.
- Heavily assisted the Office of Student Affairs with hosting many of their events.

Ben and Grace Wood Fellowship, Teachers College

2017

- 3-year \$25,000/year scholarship awarded to new doctoral student each year
- Recognizes excellent MA student in Instructional Technology and Media

Louis Gerstner, Jr. Educational Scholarship

2016

- Annual award given to an outstanding student in the CMLTD department at TC

MANUSCRIPT REVIEWER

ISLS Annual Meeting (ICLS Track Reviewer)

2023-24

iLRN Annual Conference Reviewer

2024

AERA – SIG-Advanced Technologies for Learning

2023

BioScience

May 2019

Interaction Design and Children conference

2021-2022

RELATED SKILLS

3D Printing – Layer Deposition and Resin Tank Machines

3D Modeling – proficient with Autodesk Fusion 360, Sketchfab, Meshmixer

C#, Python Programming – Advanced

HTML, CSS, Javascript - Intermediate

Unity3D - fluent