

Randy Illum

Email: randy@remap.ucla.edu

Web: www.randyillum.com

Education

University of California, Los Angeles	Expected 2020
Doctor of Philosophy, Information Studies	
Rutgers University, New Brunswick	May 2009
Bachelor of Fine Arts, <i>Summa Cum Laude</i>	

Publications

David DeLiema, Asmalina Saleh, Christine Lee, Noel Enyedy, Joshua Danish, **Randy Illum**, Maggie Dahn, Megan Humburg, Charlie Mahoney. "Blending Play and Inquiry in Augmented Reality: A Comparison of Playing a Video Game to Playing Within a Participatory Model," In Chee-Kit Looi, Joseph Polman, Ulrike Cress, and Peter Reimann (Eds). 12th International Conference of the Learning Sciences June 20-24, 2016, Singapore National Institute of Education, Nanyang Technological University, Singapore, 2016, p. 450.

Munaro, M., Horn, A., **Illum, R.**, Burke, J., and Rusu, R. B. (2014) *OpenPTrack: People Tracking for Heterogeneous Networks of Color-Depth Cameras*. In IAS-13 Workshop Proceedings: 1st Intl. Workshop on 3D Robot Perception with Point Cloud Library, pp. 235-247, Padova, Italy.

Conference Presentations

Christine, L. and **Randy Illum**. (2016) *Body Tracking Technology and Play Based Learning for Science Education*. Museum Computer Network Conference. New Orleans, LA.

Illum, R. and Burke, J. (2016) *OpenPTrack: Body-Based Group Tracking for Informal Learning Spaces*. Museums and the Web Conference. Los Angeles, CA.

Enyedy, N., Lee, C., DeLiema, D., Danish, J., Saleh, A., Dahn, M., Peters, K., Morris, N., Thomas, C., Torres, R., Cardenas, G., Creek, C., Love, Burke, J., **Illum, R.**, Wagnister, C., Horn, A., Munaro, M. and Rusu, R. (2016). *Learning About States of Matter Through Multiple Correspondences Among the Body, Abstractions, and Reality*. American Educational Research Association. Washington, DC.

Dahn, M., Lee, C., Enyedy, N., Gravell, J., Burke, J., **Illum, R.**, Avetisian, H., Paul, L., Gomez, T., & Torres, R. (2016). *The Cybermural Project: Digital Learning for Early Childhood Science Inquiry*. American Educational Research Association Annual Meeting. Washington, D.C.

Enyedy, N., Danish, J., DeLiema, D., Lee, C., **Illum, R.**, Saleh, A., Dahn, M., Peters, K., Morris, N., Thomas, C., Torres, J., Cardenas, G., Creek, C., Love, M., Burke, J., Wagnister, C., Horn, A., Munaro, M., Rusu, R. (2015). *Science through technology enhanced play*. Talk presented at the National Center for Research on Evaluation, Standards, and Student Testing, Redondo Beach, CA.

Invited Presentations

Illum, R. and Christine Lee (2015). *OpenPTrack and Interactive Design*. CheLA Art Center, Buenos Aires, Argentina.

Lee, C., **Illum, R.***, Cardenas, G., Enyedy, N., Danish, J., Saleh, A., DeLiema, D., Dahn, M., Peters, K., Morris, N., Thomas, C., Torres, J., Creek, C., Love, M., Burke, J., Waggmister, C., Horn, A., Munaro, M., Rusu, R. (2015). *Science through technology enhanced play*. International Forum for Innovation and Education (FIED), Buenos Aires, Argentina. *Attended and presented at the conference.

Peer Reviewed Technology Demonstrations

Burke, J., Fitz-Gibbons, T., **Illum, R.**, and Sandoval, Z. (2016) Engagement, Creativity, and Technology: Research for the Future of Interpretive Media in Public Space. Design Charrette and Technology Demonstration at InterpTech Conference. Monterey, CA.

Illum, R. and Burke, J. (2016) *OpenPTrack: Robust Open-Source Person Tracking For Creative Coding*. Museums and the Web Conference. Los Angeles, CA.

Burke, J., Murano, M., **Illum, R.**, and Sandoval, Z (2016) *Real-Time Person Tracking on Jetson with OpenPTrack*. Invited Demonstration GPU Technology Conference. San Jose, CA.

Research and New Media

Los Esteros del Ibera – Technical Director

2016

I lead the team to develop and execute an interactive exhibit on Argentina's newly founded national park, Los Esteros del Ibera, which was showcased as part of Tecnópolis, Argentina's yearly technology and education fair. This exhibit supported up to fifteen visitors simultaneously. Through a person's movement in the exhibit space, they could control a video linked to themselves, and through collaboration with others in the space could control what background videos were shown. As the technical director, I designed and implemented the computer vision system that allowed for visitor interaction with the content, the immersive directional audio system, and the projection system. In addition to the design of the many sub-systems I also lead the onsite system construction and implementation. This project was produced by Buenos Aires's art center cheLA.

NASA Jet Propulsion Laboratory: Deep Think Workplace – Designer

2016

A design and future technology study being conducted by UCLA's think tank CityLab to develop novel workspaces for NASA's Jet Propulsion Laboratory which will enhance collaboration between team members. The goals are to be accomplished through the use of emerging technologies, repurposing and creation of space, and design. My role in this project has been to research new technologies that can be used to collaboration. This including designing collaborative workspaces within the existing building space and new structures that can be constructed on the JPL campus which leverage the emerging collaborative technologies.

Science through Technology Enhanced Play (STEP) – Graduate Student Researcher 2014 - Present

An educational research project funded by a grant from the National Science Foundation (IIS-1323767). This project investigating how embodied play among elementary school students can be used to help them understand scientific phenomena through dramatic play and inquisitive learning methods. During my time as a researcher on this project I have contributed to the design of the pre and posttests, and administered the tests to the students. I have also assisted in the design of the intervention by guiding the development of user interface for the researchers, and the learning experience for the students.

OpenPTrack – Graduate Student Researcher

2013 – Present

An open source solution for scalable, multi-imager person tracking system aimed to support body-based interactive applications in education, art, and culture. As program manager I have lead the development, specifications, design, and execution of the hardware and implementation the system. In addition I have also designed the specifications and usability features for the software development. I work directly with our subcontractors and collaborators to ensure we are on schedule, and with the internal development team to integrate updated performance goals and features.

Interpretive Media Laboratory (IMLab) - Project Manager

2013 – Present

Collaborating with California State Parks, REMAP is designing a new interactive Welcome Pavilion for the Los Angeles State Historic Park which will house IMLab. The goal of IMLab is to engage the surrounding community in documenting and sharing their area’s history by using sensing and multi-media technology. I have researched all aspects of the hardware to be used, supported the design of the center’s main UI, and am currently managing the deployment of varying technologies, staff, and the outside collaborators of the project.

LASHP Trails - Project Manager

2013 – 2015

An offshoot of the IMLab project, LASHP Trails is a mobile website which focuses on creating interactive “trails” around the LA State Historic Park that participants can find and explore through their smart phone. The goal of each trail is to provide the participant the historical context to the surrounding area coupled with exercise. While working on this project I have been responsible for user testing and feedback, scheduling, and assisting with design.

Grace Plains – Project Manager

2014

This project mixed theater and live action role playing. Participants were brought to Google’s YouTube LA space and were given a pair of Google Glass. Through Glass, each participant received a character to play, information about their character and other characters, and a script. Actors embedded in the experience would push the story forward with their given character. I provided project management and technical assistance for this project during the conception, testing, and implementation of the project.

Fellowships

Graduate Student Research Mentorship 2016 - \$6,000

CONNECT Fellow 2016 – 17 - \$40,000

Editorial

Editorial Board:

Critical Planning Journal: UCLA Urban Planning Journal

Professional Experience

A Center for Research & Innovation in Elementary Education (CONNECT) & The Center for Research in Engineering, Media and Performance (REMAP) 2015 - Present

Graduate Student Researcher

- Leading the OpenPTrack computer vision person tracking project which includes testing hardware, developing specifications, researching hardware, testing software, and managing the software development team
- Developing interactive, mixed reality learning interventions in math and science for first and second grade students
- Collecting qualitative data including pre and posttest interviews and assessments with first and second grade students to evaluate the learning interventions
- Leading the development of the OpenPTrack system permanent installations in the school of Theater, Film, and Television and the UCLA Lab School

The Center for Research in Engineering, Media and Performance (REMAP), UCLA 2013 - 2015

Project Manager

- Managed staff and students in a multi-disciplinary research lab with the purpose of enriching the arts, education, and performance through emerging technology research and storytelling
- Collaborated with academic departments, such as architecture and computer science, and corporate computer research and entertainment companies to develop, create, and implement a diverse range of multi-media and sensing technology interventions
- Engaged in all aspects of research, design, and testing of different novel and custom technology solutions for use in education, performance, and civic computing
- Effectively managed projects and evaluation of technology functionality to ensure progress aligned with roadmap and technical specifications
- Supported students in finding technical solutions to their project goals and classwork

Dynatech Security – Simi Valley 2011 – 2013

Project Manager & Lead Programmer

- Responsible for the successful installation, programming, and implementation of customized, full home automation systems
- Ensured proper infrastructure design during the initial stages of home construction to support the automation system to be installed
- Programmed and integrated security & surveillance systems, climate controls, lighting controls, pool & spa controls, home theaters, and full home multi-media systems
- Developed custom interfaces allowing users to access the home automation system from an iPhone, iPad, remote controls, or in-wall touch screens

Boeing Defense Systems – Ridley Park, Pennsylvania 2009 - 2011

Project Manager & Data Technician

- Managed a multi-million dollar US Army logistics program for implementation on the Chinook helicopter
- Negotiated directly with the Department of Defense pertaining to program requirements, contractual obligations, and delivery schedule; incorporating changes into project control systems
- Transferred the flow down of program requirements to engineering teams and suppliers
- Coordination of program requirements across multiple teams to ensure proper integration of requirements and achievement of delivery deadlines

Matrix Art Collective – Guttenberg, New Jersey 2008 – 2009

Fabrication Specialist

- Programmed and tested the CNC mill and rapid prototype code for the creation of museum quality sculptures and specialty architectural installations
- Operated the Tecno CNC 5996 Premier Class CNC Mill and the DTM Sinterstation 2000 SLS Rapid Prototype Station, including loading and validating code before execution
- Operated a Minolta 3D scanner to develop digital 3D models
- Maintained the CNC mill and rapid prototype machine to keep both within predetermined tolerances
- Collaborated with teams to develop work flows and processes for creating final products