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Eytan Mann is an architect and computational designer working at the intersection of computational design and architecture historiography. Eytan holds a Ph.D. in Architecture at the Technion Faculty of Architecture and Town Planning, his work examines modes of transmedia historiography by mixing archival material with digital modeling, levering computation to augment sites and archives, and designing new interfaces with heritage. Starting September 2024, Eytan will be an assistant professor at Archive of the Future research group, at the Faculty of Architecture and the Built Environment of TU Delft.

ACADEMIC POSITIONS

- 2024- Assistant Professor, Archive of the Future research group, Faculty of Architecture and the Built Environment, TU Delft.
- 2024 Post-Doctoral Fellow, Material Topology Research Lab, Technion Israel Institute of Technology.

ACADEMIC DEGREES

- 2019 - 2024
  Ph.D. Faculty of Architecture and Town Planning, Technion - Israel Institute of Technology
  Advisors: Prof. Aaron Sprecher and Prof. Alona Nitzan-Shiftan
  Title: Augmenting Built Heritage in the Age of Extended Reality

  My dissertation explores the intersection between the humanistic challenge of interpreting the past and the emerging capacity to study and experience it through digital media. The research seeks to understand how emerging digital tools enable us to read the past in new and active ways through multiple voices and multiple forms of evidence. It also investigates how we can empower readers, viewers, and beholders of historical sites and their archives to arrive at different interpretations and assume agency while engaging with materials from the past, mainly when dealing with places with difficult and traumatic histories. I suggest a rigorous methodology to reconcile archival evidence, architectural remains, facts, and fiction. It explores the potential of digital media, particularly a set of mixed reality technologies, to reconcile multiple narratives and allow for various readings and experiences. By including both tangible and intangible heritage and leveraging immersive and interactive media, the research destabilizes traditional approaches to preservation and offers critical reconstructions that expose the infrastructures of historical narration.

- 2016 - 2018
  Master of Science in Architecture Studies (SMArchS), Design Computation Group, MIT
  Advisors: Prof. Mark Jarzombek, Prof. Terry Night, and Prof. Takehiko Nagakura
  Title: Gaming as Historiography - The Case of Machu Picchu

  The thesis introduced a novel approach to representing historical sites by incorporating game-design principles and technologies. They contend that researchers can merge historical documents by employing computer game design, challenging the traditional separation of space and time, resulting in a dynamic portrayal of historical places. This method enables a transition from representation to simulation, fostering active engagement in reconstructing historical sites while maintaining a critical perspective on historiography. The study applied this method to Machu Picchu, integrating Hiram Bingham's materials into a 3D game environment. This work, in conjunction with 3D scanning of the

site, formed the foundation for a hybrid game and digital archive prototype, advancing the concept of collage simulation for historical sites.

- 2013 - 2015
  Master of Arts (MA), Azrieli School of Architecture, Tel-Aviv University
  Advisor: Prof. Eran Neuman
  Title: Virtual Expressionism - The Invention of Digital Modeling

  The thesis examined the early days of computer-aided design, physical and digital modeling were used as instruments of design research. In conjunction with the exhibition 'Archeology of the Digital' (2013), the research proposed a theory of 'actual/virtual creativity' that emerges through constant movement between materialities. Awarded best thesis in 2015 at Azrieli School of Architecture.

- 2005 - 2011
  B.Arch, Azrieli School of Architecture, Tel-Aviv University
  Final thesis advisor: Prof. Eran Neuman
  Title: Moments

  The project invented a DIY motion-capture sensor and real-time data streamed movements into modeling software as a way to study the human body as a generator of "temporal form." The project proposed urban interventions based on body motion through the design tool. The project was awarded the best design research project in the Shahar Ziv Competition.

TEACHING EXPERIENCE

- 2021-2022 "Designing Virtual-Real Environments", course no. 602006, Faculty of Architecture and Town Planning, Technion Israel Institute of Technology, 20 students, a course based upon my Ph.D.
- 2020-2021 "VR Historiography", course no. 602006, Faculty of Architecture and Town Planning, Technion Israel Institute of Technology, 20 students.

  > The two courses explored theoretical and practical potential for augmenting sites and archives. During the course, students use computational techniques to augment sites' history by engaging with archival objects - governmental reports, photos, planning documents, manuscripts, and other modes of evidence, to construct immersive archives. Projects include the physical environment - segments of the site brought into a virtual environment by deploying 3D scanning techniques, implementing VR as a storytelling medium, and using AI-driven technologies to analyze historical data. The projects produced were presented in VR to a jury.

- 2022-2023 "Augmented Historical Pedagogies: Tiergarten's Hidden Urban Narratives", Collaboration between the Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology, MIT Department of Architecture, and the Institute for Architecture at TU Berlin, Funded by MIT MISTI Seed Fund, 50 students. Co-taught with: Mark Jarzombek (MIT), Cagri Zaman (MIT), Eli Keller (MIT), and Klaus Palzgummer (TU Berlin).

  > A collaborative workshop bringing together the Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology, MIT Department of Architecture, and the

Institute for Architecture at TU Berlin. The collaborative course fostered a VR- and AR-based, interdisciplinary study of the Tiergarten, Berlin's largest park and a site with unique historical transformations. Because of its complex history, not just in the field of architecture and urban planning but also within the history of film, literature, politics, zoology, hydrology, and Botanics, Tiergarten is an exemplary location for a critical exploration of the ways through which urban history is written and produced. The MIT MISTI fund funded the project, including a 10-day onsite workshop, and we are now in the process of producing a book.

- 2021-2022 "Augmented Historical Pedagogies: Film/Space", Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology, Individual Research advisor, 3 students.

  As part of the "Augmented Historical Pedagogies" workshop, the "Film/Space" project attempted to create a spatial film archive. Utilizing machine learning, archival films at Tiergarten were extracted and spatialized to reintroduce historical scenes using mixed reality, clashing fiction with reality. The project was presented at Technion and at TU Berlin to an audience of designers and historians.

- 2020-2021 "Remote Landings", Workshop, McGill Architecture together with Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology, 45 students.

  While the COVID lockdown was in place, McGill Architecture students studied sites in Israel remotely and developed design projects, while Technion Israeli students did the same in Montreal. Using a social VR platform, the workshop explored theoretical and practical mediation through immersive media. The participants could interact with each other in an immersive virtual environment, allowing them to experience a simulated version of the workshop. This allowed them to gain a deeper understanding of the concepts discussed and to practice their communication skills.

- 2019-2020 "Digital Archeology, Virtual Narratives: The Case of Lifta", Workshop, MIT Architecture together with the Archaeology Department at Ben Gurion University, 21 students.

  A collaborative project between MIT Architecture and the Department of Bible Archaeology and Ancient Near East Studies at Ben Gurion University, Israel. Despite being uninhabited, the evacuated Palestinian village of Lifta in Jerusalem is rife with historical and contemporary conflicts. In addition to serving as a symbol of the Palestinian national struggle, it also serves as a reminder of the consequences of the 1948 war and evacuation. During the workshop, Lifta's contested terrain was represented experientially by students using various digital simulation techniques. As a result, they challenged conventional understandings of the site's history and approaches to the study of conflicted histories. The workshop culminated in a VR exhibition shown in Cambridge, U.S. and in other locations.

- 2018-2019 "Virtual Design Studio", Workshop, MIT Architecture, Co-taught with: Cagri Zaman (MIT)

  In this workshop, given as part of MIT Architecture's Experimental Pedagogies series, we explore how immersive technology can be used to imagine the future of design education.

During the Virtual Design Studio workshop, participants explored novel sensory and material experiences enabled by virtual reality. The workshop aimed to develop formal design methods informed by sensory experiences and bodily interactions within immersive digital environments.

- 2018-2019 "How to Make Almost Anything", assisting Prof. Niel Gershenfeld, Center for Bits and Atoms, MIT Media Lab.
- 2016-2017 "Visual Computing", assisting Prof. Terry Night, Design Computation Group, MIT Architecture.
- 2014-2016 Final Project Studio, Bezalel Academy of Arts and Design, Jerusalem, co-instructor with arch. Liat Brix Etgar

  In the design studio, for fifth-year architecture students, we developed an "Open Source Architecture" approach to using technologies of collaboration in design in crisis, at various sites in Jerusalem.

- 2014-2016 "Bottom-Up Planning for Public Housing, Civil Rights Clinic at Tel Aviv University Law Faculty, in collaboration with a community-based lobby in Jaffa, co-taught with: Prof. Neta Ziv (TAU Law Faculty), Anat Drenger (TAU Law Faculty), Prof. Arch. Ayala Ronel (TAU Azrieli School of Architecture). 50 students
- 2013-2014 Final Project Studio, Azrieli School of Architecture at Tel Aviv University, co-instructor with Prof. Arch. Ayala Ronel.

PROFESSIONAL EXPERIENCE

- 2019- , Co-Founder of Scan the City 3D Scanning Studio, Tel Aviv - Jaffa, Israel.

  Scan The City is a creative studio that uses high-end 3D scanning to create XR content for a variety of applications, bridging between real and virtual. The studio works on the digital twining of heritage sites in Israel, as well as on industrial buildings, and the production of game assets.

- 2018-2019, Project Manager at Design Heritage Lab, MIT Architecture.

  In this role, I led and supervised global projects within the lab. My responsibilities encompassed producing 3D digital assets using various sensing techniques, drone piloting, developing XR interactions in game-engine environments, exhibition design, and conceptualization of storytelling.

- 2017-2019, Computational Designer at the Mobile Experience Lab, MIT Media Lab.

  During my time at the Mobile Experience Lab, I led a collaborative design project between the lab and Phillips Lighting. The project aimed to develop a new prototype for human-centric design in dense urban areas.

- 2015-2016, Architect at Tsionov-Vitkon Architects, Tel Aviv - Jaffa, Israel.
- 2012-2014, Architect at Kimmel Eshkolot Architects, Tel Aviv - Jaffa, Israel.
- 2009-2012, Web Developer at Siteunspecific web design firm, Tel Aviv - Jaffa, Israel.

AWARDS AND HONORS

- 2021-2024 Azrieli Fellowship, Three-year Ph.D. grant and fellowship that brings-together leading researchers from various fields, Faculty of Architecture and Town Planning, Technion Israel Institute of Technology. Advisors: Prof. Aaron Sprecher and Prof. Alona Nitzan-Shiftan, Title: "Augmenting Built Heritage Preservation in the Age of Extended Reality".
- 2013-2015 Azrieli Fellowship, Master of Arts (MA), Azrieli School of Architecture, Tel-Aviv University. Advisor: Prof. Eran Neuman. Title: "Virtual Expressionism - The Early Days of Computer Aided Design".

GRANTS

- 2023 DATA-ART Fellowship, Israel Pais Foundation. Collaboration with Dr. Irit Carmon-Popper. The Grant includes an Art and Urban Data Residency, in collaboration with Technion's Smart Social Strategy laboratory, for developing an immersive online archive of heritage sites in Israel and abroad, offering a diverse and growing public new ways to experience heritage sites through online platforms and avenues 2021-2024.
- Digital Humanities Grant by the Israel Ministry of Science, Technology and Space, Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology, "Experiential Historiography of Haifa". Lead researcher. Principle Investigators: Prof. Alona Nitzan-Shiftan, Prof. Aaron Sprecher, Prof. Dafna Gvirzman-Fisher. Other researchers: Dr. Irit Carmon-Popper, Dr. Jonathan Dortheimer.
- 2022-2023 MIT MISTI Seed Fund, "Augmented Historical Pedagogies: Tiergarten's Hidden Urban Narratives" Course, Collaboration between the Faculty of Architecture and Town Planning at the Technion, Israel Institute of Technology, MIT Department of Architecture, and the Institute for Architecture at TU Berlin. Collaborators include Mark Jarzombek (MIT), Cagri Zaman (MIT), Eli Keller (MIT), and Klaus Palzgummer (TU Berlin).
- 2022 Israel Science Foundation (ISF) Grant, Lead writer, "Augmented Site-Archive." Principle Investigator: Prof. Aaron Sprecher. In collaboration with Prof. Frederic Kaplan, EPFL. *The grant was not awarded.*
- 2020 Israel Science Foundation (ISF) Grant, Lead writer, "Inhabiting the Archive of Wadi Salib and Hadar HaCarmel –Framework for Virtual Historiography." Principle Investigators: Prof. Alona Nitzan-Shiftan, Dr. David Behar. *The grant was not awarded.*

PUBLICATIONS

- Forthcoming (2024): Mann, Eytan, Alona Nitzan-Shiftan, Aaron Sprecher "Generating Experience of Heritage - The Case of Wadi Salib", *Heritage and Affect*, Routledge.
- Mann, Eytan, Jonathan Dortheimer, Alona Nitzan Shiftan, And Aaron Sprecher. "Of Stones and Words.", Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2023, conference proceedings.
- Mann Eytan, Jonathan Dortheimer, and Aaron Sprecher. "Toward a Generative Pipeline for an AR Tour of Contested Heritage Sites." In 2022 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR), pp. 130-134. IEEE, 2022.
- Mann Eytan, and Aaron Sprecher. "VR as critical historiography: The case of Wadi Salib in Haifa." In Difficult Heritage and Immersive Experiences, pp. 80-103. Routledge, 2022.

- Jarzombek, Mark, Eliyahu Keller, and Eytan Mann. "Site, Archive, Medium And The Case of Lifta." *ART, CRAFT, AND ARCHITECTURE* (2021): 35.
- Keller, Eliyahu, Mark Jarzombek, and Eytan Mann. "Site-Archive-Medium: VR, architectural history, pedagogy and the case of Lifta." (2020).
- Nagakura, Takehiko. Mann, Eytan. Jarzombeck, Mark. Keller, Eliyahu. 'Telling Stories of Site The Case of Lifta, Jerusalem'. *CHNT Vienna, 2019*.
- Jarzombek, Mark. Keller, Eli. Mann, Eytan. 'Virtual Reality as Pedagogy of History'. *Footprint TU Delft, 2019*.
- Mann Eytan, Caine Moshe, Altaratz Doron, and Adam Havkin. "The Spirit of the Cloud: The 'New Jerusalem as a metaphor for social experiences of virtual technologies." *Proceedings of EVA London 2020 30* (2020): 58-65.

CONFERENCES AND INVITED LECTURES

- May 2023 Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), India. "Of Stones and Words."
- September 2023 Virtual and Presence Conference, MIT. "Remote Sensing the Past".
- December 2022 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR), online. "Toward a Generative Pipeline for an AR Tour of Contested Heritage Sites."
- May 2022 Transnationalism, History, Space, Design Researchers Workshop, Israel. "Augmenting the Site-Archive."
- November 2022 Azrieli Fellowship Forum, Tel Aviv. "Digital Tools for Architecture Preservation".
- April 2022 McGill School of Architecture. "Collaborative Design During COVID".
- September 2021 EAHN Architecture and Endurance, Istanbul. "Virtual Archeology of Silwan-City of David".
- August 2021 IASTE Conference. "Site, Archive, Medium, and the Case of Lifta"
- April 2021 Past-Forward: Stavros Economou Unarchived Exhibition, State Gallery Of Contemporary Art, Nicosia. "Digital Tools and Practices of Engagement with Modern Architecture Heritage".
- November 2019 Mediating the Spatiality of Conflicts Conference, TU Delft. "Digital Archaeology, Virtual Narratives".
- November 2019 CHTN Conference on Cultural Heritage and New Technologies. "Telling Stories of Site".
- April 2019 Digital Storytelling Method, MIT Media Lab. "Playing the History of the Archaeological Site of Machu Picchu".
- October 2018 Digital Heritage International Congress (DigitalHERITAGE) held jointly with 2018 24th International Conference on Virtual Systems & Multimedia (VSMM 2018), San Francisco, U.S. "Gaming for Heritage – the Case of Hiram Bingham's Voyage to Peru".
- November 2017 CHTN Conference on Cultural Heritage and New Technologies. "Pervasive Gaming and Cultural Tourism in Kyoto".
- November 2017 ACADIA Disciplines Disruption, Cambridge, U.S. "Photogrammetry Modeling Memory".
- May 2015 International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA). "Digital Modeling the Process – Frank Gehry's Lewis House".
- December 2014 Bezalel Innovation Week. "Open Architecture - Digital Mapping for Bottom-Up Design".

EXHIBITIONS

- **"ואדי/وادي/wadi", Haifa Museum of Art, August 2023 - January 2024:** 'Wadi', is an exhibition that deals with the various manifestations of a parallel world of wadis: in the way in which Wadi shapes geologies of urban layers, influences infrastructural phenomena, defines cultural and psychological boundaries, and forms the basis for natural and human phenomena that frequently spill over and blur the boundaries of urban settlement. My work includes two mixed media installations: a video flythrough of a point cloud scan of Wadi Rushmia, a Palestinian village until 1948, and a stone quarry in the recent past. A second installation presents a large-scale 3D printed model of a single house in Wadi Salib, that integrates multiple narratives about the house's past.
- **"Dissensus: Legislation, Planning, Architecture", Tel Aviv Museum of Art, January 2022 - July 2022:** Dissensus implies constant friction between values, interests, and cultures. The projects, largely produced especially for the exhibition, were created by architects and planners in collaboration with artists from the fields of visual culture, plastic art, film, and music. My work, "Before the Law" (in collaboration with Ayala Ronel, Adam Havkin, and Fadi Dahabreh) presented a video diptych showing the story of a Silwan resident and his struggles with the archaeology laws
- **"Digital Archeology, Virtual Narratives," Keller Gallery at MIT:** The VR installation, design in collaboration with Eli Keller, presented immersive design interventions within the evacuated Palestinian village of Lifta in Jerusalem. The gallery space integrated printed materials and immersive VR to unfold various aspects of the site and its archive. The installation was invited to **"Mediating the Spatiality of Conflicts", Exhibition** at International conference at TU Delft Faculty of Architecture, November 2019.
- **MIT.nano VR/AR:** As part of the MIT.nano opening event, as a researcher at the Virtual Experience Design Lab, I created virtual and augmented reality experiences to showcase the laboratory spaces and clean rooms within MIT.nano, which were closed to the public and were not accessible during the event. The VR/AR experiences provided an opportunity to explore and better understand how nanoscience and nanotechnology laboratories operate.
- **Beyond Light: Invisible Archeology, Museo Egizio:** The purpose of the "Invisible Archeology" exhibition was to illustrate the principles, tools, examples, and results of the meticulous work of recomposition of information, data, and knowledge made possible today by the application of science to other disciplines and, in particular, to the study of the artifacts. What can an object tell of itself? At the Virtual Experience Design Lab, I created an augmented reality installation that focused on one of these artifacts, La Cassa di Kha. This interactive piece enables the viewers to explore the ancient artifact with its invisible properties revealed by various scanning techniques, including XRF, IR, and VIL.

SKILLS

- Sofware Development: Python, C# for Unity Game-Engine development, VR/AR development, Android development, Web development (React, Javascript), 3D for web (WebGL, Three.js, optimization of data), Web GIS (Leaflet, Mapbox, CesiumJS) , Natural Language Processing
- Digital Manufacturing: Physical Computing, Printing and Milling, Physical-Digital Interface Design

FURTHER INFORMATION

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Active in the non-profit organization 'Cultural of Solidarity' providing humanitarian aid to families in crisis. I assist several undocumented refugee families residing in Israel, tutoring children with schoolwork and day-to-day hardships.