

Laboratory for Future Environments as (Artificial Intelligence) Sculptures

Provisional Title

Project Summary

The project “**Laboratory for Future Environments as (Artificial Intelligence) Sculptures**” explores the intersection of scientific research, artificial intelligence (AI), and contemporary sculpture. Under the artistic direction of **Micha Laury**, the project aims to create sculptural objects that act as conceptual witnesses to our evolving lives and potential future realities.

Each sculpture will be derived from key scientific themes—drawn from a set of 50 forward-looking topics developed in collaboration with **Dr. David Passig** of Bar-Ilan University (Israel). AI will serve as both a research and creative tool, helping to generate visual interpretations of scientific texts. These interpretations will then be refined, modeled, and physically constructed into sculptural forms by Micha Laury, culminating in a large-scale installation reflecting speculative future environments.

1. Background: The Role and Limitations of AI in the Creative Process

Artificial intelligence, while a powerful tool, is not yet capable of genuine artistic creativity. During four months of research at Bar-Ilan University, Micha Laury explored the creative potential and limitations of AI in generating original artistic content. He observed that while AI excels at remixing existing material, it struggles to invent new, aesthetically and conceptually compelling forms. It tends to reproduce variations of pre-existing images and ideas, operating within the bounds of its training data.

In this project, AI is therefore used not as a creator, but as a **creative assistant**—generating pictorial interpretations of scientific concepts. Micha Laury then selectively reworks these visual suggestions into three-dimensional forms. His artistic intervention fills the creative gap left by AI, translating abstract scientific ideas into tangible sculptural objects.

2. Project Themes

The project is grounded in a diverse set of research themes that reflect pressing and speculative issues about the future. These topics—selected in collaboration with Dr. Passig—are among the most debated and vital for understanding and shaping the 21st century. A few key examples include:

- The evolution of the human brain and its impact on human-object interaction

- How neurodevelopment may influence future environments
 - The consequences of climate change on future lifestyles
 - The influence of renewable energy on society and environmental design
 - The architecture and infrastructure of future cities
 - Modes of future transportation—urban, intercity, subterranean, and aerial
 - The future of domestic living and interior space design
 - Architecture in response to environmental crises: surface, underground, or ocean-based
 - New materials and substances reshaping construction and architecture
 - Floating cities: design concepts for ocean-based living
 - Integration of vegetation as a core component of future architectural design
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3. Project Objectives and Process

The overarching goal is to create a series of semi-abstract, autonomous sculptures using AI-generated visuals informed by scientific research. Each sculpture will directly respond to a specific theme and will be shaped by Micha Laury's interpretation and craftsmanship.

The creation process will unfold in five main stages:

1. Research & Topic Selection

A thorough investigation into current scientific and socio-technological trends that are shaping the future. Each selected topic will be summarized to highlight its most critical insights.

2. Text-to-Image Translation

Scientific texts will be broken into short, digestible segments. These units will be processed by AI to generate preliminary visual material. Micha Laury will define the overarching concept for each sculpture.

3. Image-to-Form Development

The AI-generated visuals will be translated into 3D volumetric forms. Under Laury's guidance, these digital forms will be refined for artistic and sculptural viability.

4. 3D Printing

All finalized components will be 3D printed using materials selected according to the theme and scale of each sculpture.

5. **Sculpture Assembly**

The physical construction of the sculptures will be done by hand. Micha Laury will assemble the various 3D-printed elements into complete sculptural works, each closely tied to its thematic origin. This phase requires substantial manual craftsmanship and artistic judgment.

4. **Realizations & Installation**

The sculptures will be realized in multiple sizes and formats, allowing for experimentation and scalability:

- **Small conceptual models** (~25 x 40 cm) will serve as initial prototypes
- **Medium-scale sculptures** (~50 x 70 cm) will be produced for select designs
- **Large-scale works** (~80 x 100 cm) will be created for the most compelling forms

All works will come together in a major **immersive installation**, designed as a conceptual "laboratory in evolution." This environment will maintain a sense of mystery around its creation and process while fostering a visual and conceptual dialogue between the individual sculptures. Together, the installation will function as a kind of "**future brain**"—an artistic embodiment of speculative intelligence and imagined worlds to come.

List of 50 topics for Micha Laury's project

1. **Quantum Computing Revolution:** Quantum computers harness quantum mechanics to perform computations at speeds far surpassing classical computers. They excel in solving complex problems involving cryptography, drug discovery, climate modeling, and optimization tasks. Quantum computing's impact extends to revolutionizing financial modeling, logistics optimization, and material science simulations, offering unprecedented computational power and insights into previously unsolvable problems.
2. **AI-Driven Economy:** Artificial Intelligence (AI) technologies such as machine learning, natural language processing, and computer vision are reshaping economies worldwide. AI automates repetitive tasks, optimizes processes, and generates insights from vast datasets, driving efficiency and innovation across industries. New job roles emerge in AI development, data science, AI ethics, and human-AI collaboration, fostering a dynamic workforce prepared for the digital age.
3. **Genomic Revolution:** Advances in genomics, gene editing tools like CRISPR, and personalized medicine are transforming healthcare. Precision medicine tailors

treatments to individuals based on their genetic makeup, improving therapeutic outcomes and reducing side effects. Gene editing technologies hold promise for curing genetic disorders, enhancing crop resilience, and advancing bioengineering applications, ushering in a new era of biotechnological possibilities.

4. **Space Exploration Expansion:** The renewed interest in space exploration, driven by private companies like SpaceX and international collaborations, aims to establish sustainable human presence beyond Earth. Colonizing the Moon and Mars, mining asteroids, and building space habitats are ambitious goals driving technological innovation in propulsion, life support systems, and resource utilization. Space exploration fosters scientific discoveries, expands humanity's reach, and inspires future generations.
5. **Neural Interface Advancements:** Brain-computer interfaces (BCIs) enable direct communication between brains and external devices, offering revolutionary applications in healthcare, communication, and entertainment. BCIs assist individuals with disabilities by controlling prosthetic limbs, restoring sensory functions, and aiding in neurological rehabilitation. Advancements in neural interfaces also drive innovations in virtual reality experiences, neurofeedback therapies, and brain-controlled technologies.
6. **Rise of Smart Cities:** Smart cities integrate IoT sensors, data analytics, AI systems, and sustainable practices to optimize urban operations and enhance citizen services. Efficient energy management, smart transportation networks, real-time monitoring of infrastructure, and responsive governance characterize smart cities. By promoting sustainability, connectivity, and livability, smart cities address urban challenges and improve quality of life for residents.
7. **Universal Basic Income Trials:** Universal basic income (UBI) experiments address concerns about job displacement due to automation and economic inequalities. UBI provides all citizens with a guaranteed income, ensuring financial stability and supporting entrepreneurship, creativity, and lifelong learning. Trials and studies assess UBI's impact on workforce participation, social well-being, and economic dynamics, shaping future social welfare policies.
8. **Augmented Reality Everywhere:** Augmented reality (AR) technologies overlay digital information onto the physical world, enhancing human experiences in various domains. AR applications range from interactive educational content and immersive gaming experiences to virtual shopping experiences and remote collaboration tools. Advancements in AR hardware, software, and content creation democratize access to augmented experiences, blurring the lines between digital and physical realities.
9. **Cultural Hybridization:** Global connectivity through the internet, social media, and digital platforms fosters cultural exchange and hybrid cultural identities. Cross-cultural

collaborations in art, music, literature, and media reflect diverse perspectives and create unique cultural expressions. Hybrid cultures embrace diversity, challenge stereotypes, and promote understanding and empathy in an interconnected world.

10. **Ethical Robotics:** Ethical considerations in robotics and AI focus on ensuring safety, fairness, transparency, and accountability in automated systems. Robotics ethics encompass designing robots with ethical decision-making capabilities, addressing biases in AI algorithms, and establishing legal frameworks for AI-driven technologies. Collaborations between ethicists, technologists, policymakers, and industry stakeholders shape responsible AI development and deployment practices for societal benefit.
11. **Renewable Energy Dominance:** Advancements in renewable energy technologies, such as solar, wind, and hydroelectric power, lead the transition to a sustainable energy landscape. Grid-scale energy storage solutions, smart grids, and decentralized energy systems enhance reliability and integration of renewable sources, reducing reliance on fossil fuels and mitigating climate change impacts.
12. **Circular Economy Adoption:** The circular economy model promotes resource efficiency, waste reduction, and sustainable production-consumption cycles. Recycling technologies, eco-design principles, and extended producer responsibility initiatives drive circularity in industries, minimizing waste generation and environmental footprints.
13. **Ocean Cleanup Initiatives:** Innovative technologies like ocean drones, passive collection systems, and biodegradable plastics tackle marine pollution and plastic waste in oceans. Collaborative efforts from governments, NGOs, and industries focus on ocean conservation, biodiversity protection, and sustainable fisheries management.
14. **Climate-Resilient Cities:** Urban resilience strategies integrate climate adaptation measures, green infrastructure, and disaster preparedness to mitigate climate change impacts on cities. Sustainable urban planning, flood management systems, and resilient infrastructure enhance cities' abilities to withstand extreme weather events and environmental stresses.
15. **Carbon Capture and Storage:** Large-scale carbon capture, utilization, and storage (CCUS) technologies capture CO₂ emissions from industries and power plants, preventing their release into the atmosphere. Carbon sequestration methods, such as geological storage and utilization in industrial processes, contribute to carbon neutrality goals and climate change mitigation efforts.
16. **Anti-Aging Breakthroughs:** Research in anti-aging science, regenerative medicine, and longevity therapies aims to extend healthy lifespans and improve aging-related health

outcomes. Cellular rejuvenation techniques, senolytics, and personalized aging interventions target age-related diseases, promoting wellness in aging populations.

17. **Cancer Immunotherapy Advancements:** Immunotherapies, CAR-T cell therapies, and precision oncology approaches revolutionize cancer treatment by harnessing the body's immune system to target and destroy cancer cells. Personalized cancer vaccines and immunomodulatory drugs improve survival rates and reduce treatment side effects.
18. **Nanotechnology Innovations:** Nanomedicine applications, nanostructured materials, and nanoscale devices revolutionize healthcare diagnostics, drug delivery, and biomedical engineering. Nanoparticle-based therapies, biosensors, and tissue engineering scaffolds offer precise and targeted medical interventions with minimal invasiveness.
19. **Bioinformatics Revolution:** Big data analytics, machine learning algorithms, and genomic data integration drive insights into complex biological systems, diseases, and drug interactions. Bioinformatics tools enable personalized medicine strategies, biomarker discovery, and genetic risk assessments, advancing healthcare decision-making and treatment efficacy.
20. **AI-Assisted Healthcare:** AI algorithms and predictive analytics optimize healthcare workflows, clinical decision support systems, and patient management processes. AI applications in medical imaging, drug discovery, virtual health assistants, and electronic health records improve diagnostic accuracy, treatment outcomes, and healthcare accessibility.
21. **Gig Economy Expansion:** The gig economy model fosters freelancing, remote work, and flexible employment arrangements, empowering workers with autonomy and diverse income opportunities. Digital platforms, gig marketplaces, and skill-sharing networks connect freelancers with global clients and projects, driving economic growth and innovation.
22. **Robotics in Industry:** Collaborative robots (cobots), autonomous vehicles, and robotic automation systems revolutionize manufacturing, logistics, and service industries. Robotics enhances productivity, quality control, and workplace safety, enabling human-robot collaboration in complex tasks and environments.
23. **Green Jobs Boom:** The shift towards renewable energy, sustainable practices, and environmental conservation creates job opportunities in clean energy sectors, conservation organizations, and green technology industries. Green job roles span renewable energy technicians, environmental engineers, sustainability analysts, and eco-friendly product designers.

24. **Blockchain for Transactions:** Blockchain technology secures digital transactions, supply chains, and decentralized finance (DeFi) ecosystems through immutable ledgers and cryptographic protocols. Smart contracts automate agreements, cryptocurrency innovations drive financial inclusivity, and blockchain-enabled voting systems ensure transparency and trust in digital interactions.
25. **Virtual Companies:** Decentralized organizations, remote teams, and virtual collaborations redefine traditional workplace models, leveraging digital tools, cloud technologies, and virtual reality platforms for seamless communication and productivity. Virtual companies embrace global talent pools, reduce overhead costs, and foster innovation in distributed work environments.
26. **AI-Powered Education:** Adaptive learning platforms, AI tutors, and immersive educational technologies personalize learning experiences, assess student progress, and enhance knowledge retention. AI-driven analytics inform pedagogical strategies, curriculum design, and lifelong learning pathways, catering to diverse learning styles and educational needs.
27. **Lifelong Learning Norm:** Continuous upskilling, micro-credentialing, and online learning platforms empower individuals with adaptable skills and knowledge for evolving job markets and career transitions. Lifelong learning initiatives bridge educational gaps, promote career advancement, and support workforce resilience in dynamic industries.
28. **Virtual Reality Classrooms:** Virtual reality (VR) classrooms and simulations create immersive learning environments for hands-on training, scientific explorations, and interactive educational experiences. VR technologies transcend geographical barriers, enabling global collaborations, cultural exchanges, and experiential learning opportunities.
29. **Global Learning Networks:** Collaborative online platforms, international partnerships, and open-access resources democratize education, research, and knowledge sharing across borders. Global learning networks connect learners, educators, and researchers worldwide, fostering innovation, cultural understanding, and collective problem-solving.
30. **Entrepreneurship Empowerment:** Entrepreneurship education, startup incubators, and venture capital ecosystems cultivate innovation, job creation, and economic resilience. Entrepreneurial empowerment programs support diverse founders, promote sustainable business models, and drive socio-economic development in communities.
31. **AI Regulation Frameworks:** Ethical AI guidelines, data privacy regulations, and AI governance frameworks ensure responsible AI development, transparency, and accountability in AI-driven systems and algorithms. International collaborations and

industry standards promote ethical AI practices, mitigate biases, and uphold human rights in AI applications.

32. **Cybersecurity Mandates:** Enhanced cybersecurity regulations, threat intelligence sharing initiatives, and cyber-resilience strategies protect critical infrastructure, digital assets, and personal data from cyber threats and attacks. Cybersecurity awareness programs and workforce training strengthen cybersecurity defenses and incident response capabilities globally.
33. **Climate Accords and Agreements:** International climate agreements, carbon pricing mechanisms, and renewable energy targets drive climate action, sustainable development, and carbon neutrality goals globally. Collaborative efforts among governments, businesses, and civil society address climate challenges, biodiversity conservation, and environmental stewardship.
34. **Data Governance Laws:** Stricter data protection laws, cross-border data transfer regulations, and consumer data privacy rights safeguard digital identities, mitigate data breaches, and promote trust in data-driven economies. Data ethics guidelines and transparency measures enhance data governance practices and responsible data usage.
35. **Space Governance:** International space treaties, lunar and celestial bodies agreements, and space resource utilization frameworks regulate space activities, protect orbital environments, and foster peaceful exploration and cooperation in space exploration endeavors.
36. **Mars Colonization:** Human missions to Mars, lunar bases, and space habitats pioneer interplanetary settlement efforts, advance space exploration technologies, and establish sustainable habitats beyond Earth. Mars colonization initiatives focus on life support systems, terraforming technologies, and resource utilization strategies for long-term human presence.
37. **AI-Enhanced Research:** AI algorithms, machine learning models, and data analytics accelerate scientific discoveries, simulations, and research insights in physics, astronomy, genomics, and materials science. AI-driven research tools optimize data processing, hypothesis testing, and knowledge extraction, unlocking new frontiers in scientific understanding and innovation.
38. **Quantum Communication Networks:** Quantum encryption protocols, quantum key distribution, and quantum secure communication networks ensure secure data transmissions, cryptography, and cybersecurity in the quantum computing era. Quantum internet experiments and quantum teleportation technologies pave the way for quantum-resistant communications and information security solutions.

39. **Biotech Innovations:** Biomedical breakthroughs, synthetic biology advancements, and bioengineering applications address global health challenges, biodiversity conservation, and sustainable food production. Biotech innovations encompass gene editing therapies, biofuels production, and regenerative medicine solutions, offering transformative solutions to complex biological and environmental problems.
40. **Ocean Exploration:** Deep-sea exploration missions, marine biodiversity studies, and ocean conservation initiatives uncover mysteries of ocean ecosystems, geological formations, and underwater habitats. Ocean exploration technologies, such as submersibles, underwater drones, and autonomous marine vehicles, enable scientific discoveries and environmental monitoring in deep ocean environments.
41. **5G and Beyond:** Hyper-connected 5G networks, satellite internet constellations, and terabit-speed data transmission technologies revolutionize global communication, connectivity, and digital interactions. 5G-enabled IoT devices, smart cities infrastructure, and high-definition streaming services enhance user experiences and drive innovation in telecommunications.
42. **Smart Infrastructure:** AI-driven smart grids, sustainable buildings, and IoT-enabled infrastructure optimize energy usage, transportation networks, and urban planning initiatives. Smart infrastructure solutions monitor environmental parameters, reduce energy waste, and enhance resilience to climate-related challenges in urban and rural settings.
43. **Hyperloop and Maglev Networks:** High-speed transportation systems like hyperloops, maglev trains, and vacuum tube transport networks redefine intercity travel, logistics, and freight transport efficiency. Hyperloop technologies promise ultra-fast travel speeds, reduced carbon footprints, and seamless connectivity between urban centers and regions.
44. **Quantum Internet Protocols:** Quantum encryption protocols, quantum entanglement phenomena, and quantum key distribution methods establish ultra-secure quantum internet networks resistant to classical hacking methods. Quantum internet experiments and quantum teleportation technologies demonstrate the feasibility of quantum communication protocols for future cybersecurity and data privacy applications.
45. **Renewable Energy Storage:** Breakthroughs in energy storage technologies, such as advanced batteries, hydrogen fuel cells, and supercapacitors, enable efficient energy capture, storage, and distribution from renewable sources. Grid-scale energy storage solutions and distributed energy systems support renewable energy integration, grid stability, and energy demand management.
46. **Water Crisis Solutions:** Desalination technologies, water recycling systems, and sustainable water management practices address global water scarcity challenges,

ensure water quality, and promote water conservation in agriculture, industry, and domestic use. Water purification innovations and decentralized water treatment solutions improve access to clean water in water-stressed regions.

47. Urban Air Quality Initiatives: Green transportation systems, air pollution monitoring technologies, and emission reduction policies combat urban air pollution, enhance air quality standards, and mitigate health risks associated with air pollution exposure. Sustainable mobility solutions, electric vehicle adoption, and green infrastructure projects promote cleaner air in cities and metropolitan areas.
48. Pandemic Preparedness: Global health surveillance networks, vaccine research collaborations, and pandemic response strategies enhance global preparedness for infectious disease outbreaks, pandemics, and public health emergencies. Vaccine development innovations, rapid testing technologies, and healthcare infrastructure resilience ensure effective responses to global health crises.
49. AI Ethics Councils: International AI ethics councils, regulatory bodies, and industry standards organizations develop ethical AI guidelines, promote responsible AI deployment, and address ethical challenges in AI technologies. AI transparency, fairness, accountability, and bias mitigation measures ensure ethical AI practices and societal trust in AI-driven systems.
50. Mental Health Focus: Mental health awareness campaigns, teletherapy platforms, and AI-driven mental health diagnostics improve mental health support, access to mental health services, and destigmatization of mental health issues globally. Digital mental health tools, remote counseling services, and community support networks prioritize holistic well-being and mental health care accessibility.

Conclusion:

The journey toward 2050 is marked by unprecedented technological advancements, societal transformations, and global collaborations aimed at addressing complex challenges and shaping a sustainable, equitable future. Embracing innovation responsibly, fostering inclusive growth, and prioritizing global cooperation are key pillars in navigating the transformative trends that lie ahead. By harnessing the power of human ingenuity, technological innovation, and collective action, we pave the way for a brighter and more resilient tomorrow for generations to come.

Drawing of the installation



Example of a sculpture: Organic underground architecture

