# Expressive Interactions

Classroom ☐
Studio or workshop ☐
External venue ☐
Online ☐

Name

M-KF-E-301-FS-252601-04
M-KF-301-FS-252601-04
Codes ER-MOME-MA-252601-05

Host **Future School**

| | Type | ECTS | Contact hours | Student work | Course type | Semester | Unit |
|---|---|---|---|---|---|---|---|
| Basic info | **Practical** | **5** | **48** | **102** | **R & D** | **1** | **-** |

Recommen-dation

**This course is tailored for design students interested in going beyond the conventional possibilities of artificial intelligence, using Human Computer Interations (HCI). Rather than treating AI as a service for end users and business scenarios, this program introduces students to the inner workings of machine learning systems through accessible, hands-on activities, like the webacamera, sensors, sounds and other modalities. You'll work with tools like Google's Teachable Machine, open-source large language models (LLMs), and interactive platforms to train, visualize, and experiment with real AI models. Along the way, you'll gain a practical understanding of core concepts such as data input/output, model training, neural network structure, and prompt-based learning. By the end of the course, you'll not only be able to creatively integrate AI into your design practice, but also critically engage with how these systems function and influence digital culture.**

Short Description

The aim of the course is to provide a critical and practical understanding of artificial intelligence and machine learning systems using realtime, hands-on prototypes. Students will explore both the cultural and technological dimensions of AI through a hybrid methodology that combines theoretical inquiry with hands-on experimentation, students will engage in activities like data processing, model training, and multimodal representation (text, visuals, sound). This approach encourages critical reflection on how machine learning operates and how it can be integrated meaningfully into creative and design practices.

Teachers

| Name | Contact information | Short bio | Open hours |
|---|---|---|---|
| Agoston Nagy | +36304809295 | coding, algorithmic art, workshops | |
| | | | |

Semester schedule

| Course scheduling | Weekly class appointments |
|---|---|
| | |

| # | Date | Weekly educational content |
|---|---|---|
| 1 | | **1. Introductions**<br><br>Personal motivations, prior exposure to AI or coding, and initial expectations. Overview of the AI and machine learning landscape: historical milestones, |

| | | |
|---|---|---|
| | | cultural impact, and emerging trends in creative applications. |
| 2 | | **2. Fundamentals**<br><br>Understanding machine learning basics: data types, origins, features, labels, training sets. Overview of how ML systems function—from inputs to predictions. Discussion of AI as system and medium. |
| 3 | | **3. Tools & Platforms**<br><br>Introduction to accessible frameworks and tools such as Google Teachable Machine, Hugging Face, and RunwayML. Overview of languages (Python, p5.js), workflows, and the role of no-code vs code-based platforms in creative ML. |
| 4 | | **4. Context & Critique**<br><br>Identifying the limitations of machine learning: bias, error, overfitting, misleading outputs. Case studies of problematic AI applications. Developing a critical lens for interpreting and creating with AI. |
| 5 | | **5. Data Acquisition**<br><br>Exploring data sources and collection methods: measuring, scraping, recording, and curating datasets. Ethical concerns and practical considerations in dataset design and reuse. |
| 6 | | **6. Representations**<br><br>Translating model outputs into meaningful formats: visualizations, sonifications, text generation, interactive artifacts. Exploring representation across time, space, and modality. |
| 7 | | **7. Hands-On Workshop Pt. 1**<br><br>Experimenting with training custom models using image, sound, or pose data. Prototyping interactions and designing with AI feedback loops. |
| 8 | | **8. Real-Time Processing**<br><br>Working with live data streams: sensors, microphones, cameras. Filtering and routing inputs for dynamic ML-based interaction. |
| 9 | | **9. Pattern Recognition & Analysis**<br><br>Using machine learning to detect patterns, classify inputs, and discover correlations. Interpreting internal model behavior and experimenting with model fine-tuning. |

| | | |
|---|---|---|
| | | |
| 10 | | **10. Prediction & Insight**<br><br>Exploring inference and predictive capabilities. Generating speculative or functional outcomes using heuristics, pattern extrapolation, and prompt engineering. |
| 11 | | **11. Hands-On Workshop: Pt. 2**<br><br>Final project development: integrating ML models into a creative prototype or experience. Emphasis on concept, execution, and critical framing. |
| 12 | | Class Work Presentation & documentation |
| 13 | | |
| 14 | | |
| 15 | | |

Requirements and evaluation

| Assignments | Evaluation criteria | Deadline | % in evaluation |
|---|---|---|---|
| 10 mins Presentation & Pitching | Active participation on the classes aesthetic qualities of the practical work<br><br>Presentation (visual introduction of the class work)<br><br>Method of assessment:<br>Practical demonstration, pitching | 10th week | 40% |
| Video documentation (1.5 mins) | | 12th week | 20% |
| Presenting interactive software as working prototypes | | 9-12th week | 40% |
| | | | |
| | | | |

Compulsory readings

Recommended readings

John Maeda (2019): *How to Speak Machine*, Penguin Publishing Group
Kate Crawford (2021): *Atlas of AI*, Yale University Press
Matthew Fuller & Andrew Goffey (2012): *Evil Media*, MIT Press
Lev Manovich (2020): *AI Aesthetics*, Strelka Press
Mario Klingemann (2020): *Neural Glitch*, Specter Press
Daniel Shiffman (2012): *The Nature of Code*, self-published
Chris Salter (2022): *Sensing Machines: How Sensors Shape Our Everyday Life*, MIT

Learnings

| | |
|---|---|
| Knowledge | Critical understanding of quantitative data with a systems thinking approach |
| Skills | Planning interactive systems according to measurable data & feedback mechanisms |
| Attitude | Independent analysis, with a focus on aesthetic qualities and visual clearance |
| Responsibility | Independent decision making in the professional field |

Exemption

☒ Exemption from attending and completing the course cannot be granted
☐ Exemption may be granted from the acquisition of certain competencies and the fulfilment of tasks
☐ Some tasks can be substituted with other activities,
☐ A full exemption can be granted

Curriculum connections

| Unit | Parallel courses | Course proportion in unit |
|---|---|---|
| Befoglaló tantárgy címe | [Ez a kurzus] | |
| | Másik kurzus címe | |
| | Harmadik kurzus címe | |

| Course prerequisites | Is it available as an elective? | Prerequisites in case of elective |
|---|---|---|
| | | |

Misc. information