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ART AND TECHNOLOGY AREA DRAFT

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This draft includes the initial aspects, considerations, and ideas about the directives for establishing the Art and Technology Area (A+T) of the University of the Arts in Singapore. It is based upon my expertise in the field, and on my academic experience in digital and new media art since 1998.

1. Introduction

Key concepts and principles of the A+T should emerge from appreciation and understanding of the subjects, achievements, consequences and potentials of the arts in relation with science, technology and other areas of human creativity. A+T should address the experimental interplay and cross-enhancement between art, science and technology in order to create new meaningful ways for representing the natural phenomena and transforming human experience and existence.

A+T should embody and develop the principal skills for the arts in 21st century: creativity, critical thinking, collaboration, communication, working smart, and learning how to learn. In a broader prospect, it should address global challenges by expanding human creativity, by exploring manifestations and implications of human intelligence, and by defining cogent strategies for the responsible development and application of art and technology.

This project should leverage the strategic affinity toward expanding and enhancing the transdisciplinary field of art and technology articulated in Singapore Arts Plan 2018-2022.

2. Critical Aspects and Concerns

2.1 Academic Autonomy

Global changes of educational institutions' financial status since the 1980's have resulted in the erosion of academic autonomy. It often leads to cynically obedient policies which degrade educational process from complex, dedicated research and learning experience into routine social service modelled around economic trends and pragmatically organized as vocational training for applicable skills which results in formal certification.

The academia should be the avantgarde in addressing this strategic issue by examining, critiquing and overcoming its own biases, and by working with government and private sector to correct these circumstances.

Therefore, the significance of the University of the Arts should go beyond the expected production of competent graduates towards directing expertise to support creativity and stimulate learning, and gathering insights which deepen our understanding of what it means to be human, and improve the sense of our place in nature.

2.2 Creative Mindsets

Contemporary computational artists working primarily with visual media usually cannot pride themselves with excellence in "basic" manual skills such as observation-based drawing, which manifests in their works. Similarly, when non-computational artists interact with computational tools, they often struggle or can be discouraged by counterintuitive disassembly of experience, procedural literacy and other cognitive skills required for creative coding. Both categories of artists rely on complex production/presentation systems but the lack of experience in other media prevents them from recognizing the opportunities to achieve their desired outcomes by the more adequate means.

The perceptive, intellectual and psycho-physiological difficulty of acquiring and mastering various related skills helps artists to embody both humility and critical

attitude toward creative process regardless of the mediums they later use. The A+T project should provide students of all creative backgrounds with a systematized methodological framework for understanding broader creative entanglements of the arts, and for emancipated technical learning.

2.3 Technocentrism

Tecnocentrist trends within artistic and academic contexts should be particularly addressed. Tecnocentrist, technocratic or technofetishist mentalities, which have haunted computational art since its outset, affect the poetic cogency and academic practice of contemporary new media art. Engineering approach usually works well as a synergetic enhancement of the “traditional” artistic mindset, but when it prioritizes technical expertise in lieu of other factors, it reduces the scope of the artists’ critical engagement and overall impact of their works. Although they apparently strive for both versatility and thoroughness, most of academic programs which integrate coding skills into a standard learning repertoire of art and design (including those referenced here) still tend to be functionally more conducive for nerdy idiosyncrasies than for artistically essential “quirks” such as spontaneity, goofiness, wandering or stubbornness. They sometimes try to maintain diversity uncritically or cynically by supporting weak ideas or conceptual naivete, and eventually usher students to adopt subpar professional criteria. Furthermore, these initiatives easily migrate from one trendy tech paradigm to another, often leaving the older relevant areas underexplored. A recent example is the shift from using parametric techniques and symbolic logic to using statistical, ML-influenced sub-symbolic rules in computational generative art.

The A+T project should tackle these issues systematically and sincerely.

2.4 Art and Science/Technology Model

Contemporary academia and culture emphasize and support various Art and Science/Technology models which aim to synergize the artists’ and scientists’ organizational frameworks, creative methodologies, and exploratory approaches for the responsible and relevant outcomes. However, the optimal conceptual and

institutional strategies for this synergy are still unknown. The existing Art and Science/Technology projects are often less effective than expected for a number of systemic reasons such as dogmatic/parochial mindsets, inadequate understanding of fundamental concepts across the fields, methodological discrepancies, inadequate institutional support, etc.

These issues should be thoroughly concerned and addressed in conceptualizing and implementing the A+T project.

3. Program

3.1 Areas

The immense creative scope, diverse conceptual approaches and aesthetic identities of transdisciplinary experimental arts should be covered. The creative scope includes but is not restricted to the fields and disciplines such as computational art, generative methodologies, interactivity, expanded reality (AR/VR), sound art, game art, interface design, animation, video, and other areas of new media art. Professors' critical expertise and collaborative programs will provide the updated critical insights into the emerging research areas, methodologies and technologies that the program will adopt.

3.2 Model

Teaching and studying transdisciplinary experimental arts should combine enthusiasm for their creative and expressive potentials with a critique of their cultural contexts, ethical consequences and political implications. The program should encourage open-minded experimental approach in examining the creative and expressive aspects of transdisciplinary art within the conceptual, cognitive, and educational frameworks of science, technology and digital culture. It should be informed by all related techno-scientific disciplines such as computer science, physics, biology and cognitive sciences, etc., and draw on a well-established theoretical work in new media studies and digital humanities.

3.3 Curriculum

The curriculum should empower students' new media-related technical skills by encouraging broad and deep understanding of the related art areas such as visual arts, performance, music, literature, etc.

The program should put equal accent on:

- Studying contexts, concepts, and methodologies.
- Providing frameworks for mastering relevant techniques and tools (for example the most suitable coding tools for computational art modules).
- Exploring the poetic, expressive, and cognitive scopes.

3.4 Modularity

Program modularity should be a priority so students will be able to design their own learning maps and trajectories, but keep the progression and maturation logic within this open structure. Depending on the character and requirements of modules or tracks, the program should combine all types of compulsory and elective courses: practice-based (studio/lab), theoretical, seminars, collaborative generic modules, intra- and multi-department hybrid, etc. Courses offered each semester should be selected from a broader and regularly updated pool.

3.5 Programmatic Diversity and JEDI

As the arts have evolved into a complex network of interrelated interests, skillsets, methods, practices, and contexts for expression and meaning making, A+T should support courage, openness, dedication, persistence, patience, and passion from all involved actors: students, faculty, staff, and administrators. It should epitomize diversity, inclusivity, equity and justice.

4. Teaching Methodologies

Teaching methodologies should be defined by flexibility, adaptability, anticipation and proactive innovation. They should be integrated or closely related with the professors' research across the University and beyond (within external partnerships). They should be empowered by experimentation, conceptual and stylistic/aesthetic openness.

The methodological focus should be on:

- Exploratory and experiential learning which exposes students to a range of ideas from the arts, science, technology, philosophy and popular culture;
- Inventing new ways to interrelate the material and procedural features of various media and techniques with the narrative, expressive, experiential and reflexive values;
- Gaining deep understanding of the creative processes, their communicative powers, educational potentials and social impacts;
- Cultivating complex relationship with different technological systems for the responsible art production;
- Combining intellectually open experimentation with a sound balance of motivation and interests, individual and collaborative work, learning, critical thinking, assessment, evaluation and communication.

5. Learning outcomes

The desired learning outcomes should include:

- Developing effective research and production techniques;
- Mastering technical skills;
- Building poetic and ethical competences for the creation of cogent, engaging and socially relevant artworks.

6. Research, Collaboration and Partnerships

A+T should epitomize collaborative research and production, sharing insights and generating ideas across the college, university and beyond with experts in various disciplines such as computer science, other AI-related fields, physics, biology, cognitive sciences, humanities, digital humanities, etc.

Effective transdisciplinary work includes:

- Intra-department, inter-department and inter-college cooperation that will provide a diverse range of research/learning/development opportunities through cross-institution modules and projects, smart distribution and pooling of resources, and other synergetic solutions.
- National, regional, and global collaborative enterprises with external partners in the arts, science and industry (IT, creative industries, etc.) for research, teaching, production, and public outreach.
- Support for initiating and organizing conferences, exhibitions and public outreach projects.

It requires evolving mechanisms, formats, and protocols for a straightforward, proactive, mutually beneficial and transparent collaboration with clearly defined expertise domains and responsibilities. Students' creative participation, teaching and supervision should be integrated in all collaborative models.

6.1 International Academic Collaboration

If this has not been already implemented in the University integration process, A+T should include a (transparent and straightforward) system to translate or analogize students' grades to European Credit Transfer System (ECTS) points on a semestral or trimestral level. This will help establish partnerships and fund application with educational institutions in Europe.

7. References

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Levin, Golan, and Tega Brain. 2021. *Code as Creative Medium: A Handbook for Computational Art and Design*. Cambridge, MA: The MIT Press.

Taylor, Grant D. 2014. *When the Machine Made Art*. New York and London: Bloomsbury Press.

V.A. 2018. *Our Singapore Arts Plan 2018-2022: Excellence that Inspires Our People and Connects Our Communities*. National Arts Council, Singapore.

8. Academic Programs Researched

Art & Science, Universität für angewandte Kunst Vienna (https://www.dieangewandte.at/studium/artscience_en)

Art and Technology Program, Ohio State University (https://u.osu.edu/artandtech/)

Art and Technology Studies Program, School of the Art Institute of Chicago (https://www.saic.edu/)

Computational Studio Arts, Goldsmiths University of London (https://www.gold.ac.uk/pg/mfa-computational-arts/)

Design and Media, University of California at Los Angeles (http://dma.ucla.edu/)

Digitale Klasse, UdK Berlin (https://newmedia.udk-berlin.de/)

Future Sketches, MIT Media Lab (https://www.media.mit.edu/groups/future-sketches/overview/)

Institute for the Arts, Arizona State University (https://artsmediaengineering.asu.edu/)

International Academy of Media Arts and Sciences (IAMAS) (https://www.iamas.ac.jp/)

ITP (Interactive Telecommunications Program), Tisch School of Arts, New York University (https://tisch.nyu.edu/itp)

Kunsthochschule für Medien Köln (https://www.khm.de/home/)

Media Arts and Technology (MAT), University of California at Santa Barbara (https://www.mat.ucsb.edu/)

Media Lab, Massachusetts Institute of Technology (https://www.media.mit.edu/)

School for Poetic Computation, New York (https://sfpc.io/)

School of Art, Design and Media (ADM), Nanyang Technological University in Singapore (https://www.ntu.edu.sg/adm)

School of Arts, Technology and Emerging Communication (ATEC), University of Texas in Dallas (https://atec.utdallas.edu/)

School of Creative Media, Hong Kong City University (https://www.scm.cityu.edu.hk)