

## BioMed-AI Summer School

Biomedicine & Bioethics supporting responsible innovation in the era of Big Data & AI

Athens, 12-16 June 2023

### Program

1st day – Monday, 12<sup>th</sup> June

09:00-10:00	<b>Registration at the Premises of the Academy of Athens, Panepistimiou 28, Athens</b>
10:00-10:30	<p><i>Welcome talks</i></p> <p><i>Academician Lucas Papademos President of Biomedical Research Foundation, Academy of Athens (BRFAA)</i></p> <p><i>Academician Michael Stathopoulos, President of the Academy of Athens</i></p> <p><i>Academician Christos Zerefos, General Secretary of the Academy of Athens</i></p> <p><i>Prof. Patrizia Borsellino, Head of Bioethics and Philosophical Approach to Law Department, The International Chair in Bioethics</i></p> <p><i>Prof. Nancy Papalexandris, President of the Committee of Ethics &amp; Deontology, BRFAA</i></p> <p><i>Prof. Spyridon Flogaitis, Director EPLO</i></p>

<p>10:30 – 11:30</p>	<p><b><i>Introductory Remarks – Round table Discussion Moderated by the journalist Makis Provatas</i></b> <i>Prof. Papadimitriou Christos, Columbia University and Arcimedes/Athena RC Principal Scientist</i> <i>Dr. Sellis Timos, Scientific Director Archimedes/Athena RC</i> <i>Dr. Aristotelis Chatziioannou, Biomedical Research Foundation, Academy of Athens, Principal Investigator</i> <i>Dr. Spyridon Kouvelis, Instistute for Sustainable Development, EPLO</i> <i>Dr. Olga Tzortzatou – Nanopoulou, Director BioMed-AI</i></p>
<p>11:30-12:00</p>	<p>Keynote speech <i>Prof. Papadimitriou Christos, Columbia University and Arcimedes/Athena RC Principal Scientist</i></p>
<p>12:00-12:30</p>	<p>Agile learning as the key for actionable personalization in Precision Medicine <i>Dr. Aristotelis Chatziioannou, Biomedical Research Foundation, Academy of Athens, Principal Investigator</i></p>
<p>12:30-13:00</p>	<p>Turing Equivalence and Artificial (Dog) Intelligence in Cancer Diagnostics <i>Dr. Andreas Mershin, MIT Center for Bits and Atoms</i> <i>Dr. Dimitrios Ioannidis, Roach, Ioannidis &amp; Megaloudis LLC</i></p>
<p><b>END OF OPEN DAY AT THE ACADEMY OF ATHENS</b></p> <p style="text-align: center;"><b>&amp;</b></p> <p><b>BEGINNING OF CLOSED SESSIONS AT THE EUROPEAN PUBLIC LAW ORGANIZATION (EPLO)</b></p>	
<p>14:00-15:00</p>	<p><b>Lunch break at the premises of the EPLO, 2 Polygnotou and Dioskouron St., Plaka, Athens</b></p>

15:00-16:00	<p>Introduction to machine learning</p> <p><i>Dr. Maria Vakalopoulou &amp; Dr. Stergios Christodoulidis, University Paris-Saclay, Archimedes/Athena RC</i></p>
16:00-16:15	<p><i>Coffee Break</i></p>
16:15-18:00	<p>Workshop: Hands on definition, training and testing of various machine learning algorithms for medical data</p> <p><i>Dr. Maria Vakalopoulou &amp; Dr. Stergios Christodoulidis, University Paris-Saclay, Archimedes/Athena RC</i></p>
21:00	<p><b><i>Opening Ceremony, Cocktails &amp; Finger food at the gardens of the Academy of Athens, Panepistimiou 28, Athens</i></b></p>



**Second day – Tuesday 13<sup>th</sup> June**

09:00-10:00	Fairness in AI <i>Prof. Evi Pitoura, University of Ioannina, Archimedes, Archimedes Research Unit</i>
10:00-11:00	Are AI models safe? <i>Prof. Sotiris Tsaftaris, University of Edinburgh, Archimedes/Athena RC</i>
11:00-11:15	Coffee break
11:15-12:15	Perceptual Engineering and Myco-Everything <i>Dr. Andreas Mershin, MIT Center for Bits and Atoms</i>
12:15-13:15	Knowledge Mining from data with Artificial Intelligence methods <i>Prof. Christos Troussas, UWA</i>
13:15-14:00	Lunch Break
14:00-15:00	Introduction to deep learning and medical imaging <i>Dr. Maria Vakalopoulou &amp; Dr. Stergios Christodoulidis, University Paris-Saclay, Archimedes/Athena RC</i>
15:00-15:15	Coffee Break
15:15-17:00	Workshop: Hands on definition, training and testing of deep learning algorithms for medical image segmentation <i>Dr. Maria Vakalopoulou &amp; Dr. Stergios Christodoulidis, University Paris-Saclay, Archimedes/Athena RC</i>
17:00- 18:00	Paediatrics & AI, <i>Prof. Evangelia Charmandari, BRFAA &amp; NKUA Medical School</i>



**3<sup>rd</sup> day – Wednesday 14<sup>th</sup> June**

09:00-10:00	Are lawyers destined to become obsolete with AI replacements? <i>Dr. Dimitrios Ioannidis, Roach, Ioannidis &amp; Megaloudis LLC</i>
10:00-11:00	International cooperation on regulating AI <i>Dr. Fotios Spyropoulos, University of West Attica</i>
11:00-11:15	Coffee break
11:15-12:15	AI & Equality: A Human Rights-Based Approach <i>Sofia Kypraiou, École Polytechnique Fédérale de Lausanne</i>
12:15-13:15	UN Sustainable Development Goals (SDGs) & AI <i>Dr. Spyros Kouvelis, Institute for Sustainable Development, EPLO</i>
13:15-14:00	Lunch Break
14:00-15:00	Human-centric explainable artificial intelligence approach in healthcare <i>Prof. Antoine Harfouche, Università degli Studi della Tuscia</i>
15:00-15:15	Coffee break
15:15-18:00	Workshop: Learning by doing; planning, training, and interpreting an explainable artificial intelligence (X-AI)-based analysis in phenomic medicine <i>Prof. Antoine Harfouche, Università degli Studi della Tuscia</i> <i>Dr. Farid Nakhle, Università degli Studi della Tuscia</i>



4<sup>th</sup> day – Thursday 15<sup>th</sup> June

09:00-10:00	Socially Responsible Innovation in the era of Big Data and AI <i>Dr. Sellis Timos, Scientific Director Archimedes/Athena RC</i>
10:00-11:00	Data Science in Biophysics for applications in drug discovery <i>Dr. Zoe Cournia, Biomedical Research Foundation, Academy of Athens, Principal Investigator</i>
11:00-11:15	Coffee break
11:15-12:15	Biobanking, Imaging & AI Round Table Discussion <i>Dr. Michaela Theresia Mayrhofer, Head ELSI, Research &amp; Development, BBMRI -ERIC</i> <i>Dr. Melanie Goisauf, Research &amp; Development, BBMRI -ERIC</i> <i>Dr. Mónica Cano Abadía, Research &amp; Development, BBMRI -ERIC</i> <i>Dr. Kaya Akyüz, Research &amp; Development, BBMRI - ERIC</i>
12:15-12:30	Coffee break
12:15-13:15	AI-Enabled Digital Pathology for Precision Oncology <i>Dr. Maria Vakalopoulou, University Paris-Saclay, Archimedes/Athena RC</i>
13:15-14:00	Lunch Break
14:00-15:00	Get Motivated & able to design, create and implement AI ethically: take a seat in the AI Ethics virtual reality case classroom <i>Prof. Antoine Harfouche, Università degli Studi della Tuscia</i>
15:00-15:15	Coffee break
15:15-18:00	Workshop: Ethical AI and ethical decision-making: have fun practising ethical reasoning: problematic algorithms vs algorithms that are doing ethics well in biomedical research case studies <i>Prof. Antoine Harfouche, Università degli Studi della Tuscia</i> <i>Dr. Farid Nakhle, Università degli Studi della Tuscia</i>



**5<sup>th</sup> day – Friday 16<sup>th</sup> June**

09:00-10:00	Responsible Research & Innovation (RRI) as a Bridge between Science and Society <i>Dr. Panagiotis Kavouras, National and Technical University of Athens</i>
10:00-11:00	Commercial Exploitation of Research Results <i>George Panagopoulos, Technology Transfer Consultant, PRAXI Network</i>
11:00-11:15	Coffee break
11:15-11:45	The start-up experience: from RRI to ESG <i>Christina Deligianni, EPLO</i>
11:45-12:15	Legal and ethical challenges in accessing biobank data to develop AI tools <i>Dr. Ciara Stauton, EURAC Research, SciBioEU</i>
12:15-13:15	RRI Governance: the way forward <i>Dr. Eleni Spyraou, National and Technical University of Athens</i>
13:15-14:00	Lunch Break
14:00-15:00	Workshop: Creativity and innovation with constraints: unlock your creativity in the eXtended Reality and eXplainable Artificial Intelligence ('X-RAI') metaverse <i>Prof. Antoine Harfouche, Università degli Studi della Tuscia</i> <i>Dr. Farid Nakhle, Università degli Studi della Tuscia</i>
15:00-15:15	Coffee break
15:15-17:15	Panel Discussion Byting the sense of smell and how law and technology should co-evolve <i>Dr. Andreas Mershin, Dr. Marios Broustas, Dr. Dimitrios Ioannidis &amp; Olga Tzortzotou - Nanopoulou</i>
17:15-18:00	Closing Ceremony, Keynote speaker <i>Prof. Constantinos Daskalakis, MIT and Archimedes/Athena RC Principal Scientist</i>