PROGRAM

Days 1-2 Multimodal Data Acquisition and Processing

Venue: WUT, Faculty of Mechatronics, Room 517, 5th Floor
Boboli 8 Str, Warsaw

DAY 1: Monday 8 November 2021

2D/3D/4D Multimodal Data Acquisition

08:30-09:00	Welcome to WUT; short introduction and activities on TS, **Prof. Robert Sitnik**
9:00-10:30	Data Capturing Lab, hands-on (parallel sessions, duration 1h 30mins each) 1. *Computed Tomography (CT)* *Tomasz Kowaluk, WUT, room 4 - metrology lab* 2. *White Light Interferometry (WLI)* *Anna Pakuła, WUT, room 503 - optical lab* 3. *Structured Light 3D (SL3D)* *Sunita Saha, WUT, room 503 - optical lab* 4. *Structure from Motion (SfM)* *Jakub Markiewicz, WUT, room 517* 5. *Digital Image Correlation (DIC)* *Athanasia Papanikolaou, WUT, room 512 - optical lab*
10:30-12:00	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
12:00-13:30	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
13:30-15:00	*Break for Lunch* *Pub Zaczek, Wołoska 141A, 02-507 Warszawa*
15:00-16:30	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
16:30-18:00	Lab hands-on (parallel sessions 1, 2, 3, 4,5)

Funded by the Horizon 2020 programme of the European Union. Grant # 813789

DAY 2: Tuesday 9 November 2021

2D/3D/4D Multimodal Data Processing

9:00-10:05	Data Processing Lab, hands-on (parallel sessions, duration 1h and 5 mins each) 1. *3D Data Processing SfM (Agisoft station)* *Jakub Markiewicz, WUT, room 517* 2. *Multimodal Data Integration (FRAMES station)* *Piotr Foryś, WUT, room 517* 3. *3D Data Segmentation* *Sunita Saha, WUT, room 517* 4. *3D Data Processing (CloudCompare, MeshLab)* *Piotr Foryś, Jakub Markiewicz, Robert Sitnik, WUT, room 517* 5. *Digital Image Correlation (DIC)* *Athanasia Papanikolaou, WUT, room 512 - optical lab*
10:05-11:10	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
11:10-12:15	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
12:15-13:20	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
13:30-15:00	*Break for Lunch* *Pub Zaczek, Wołoska 141A, 02-507 Warszawa*
15:00-16.05	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
16:05-16:25	Discussion of Results Team 1
16:25-16:45	Discussion of Results Team 2
16:45-17:05	Discussion of Results Team 3
17:05-17:25	Discussion of Results Team 4
17:25-17:45	Discussion of Results Team 5
17:45-18:00	General Discussion of Results, Perspectives, Challenges and outcome

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Days 3-4 Conservation Workshop

Venue: AFAW, Faculty of Conservation and Restoration of Works of Art, Lobby Across The Main Entrance

Wybrzeże Kościuszkowskie 37 Str., Warsaw

DAY 3: Wednesday 10 November 2021

Introduction to Conservation and Restoration Methods

08:30-09:00	Welcome to AFAW; short introduction, **Prof. Jacek Martusewicz**
9:00-10:30	Conservation Lab, hands-on (parallel sessions, duration 1h 30mins each) 1. *Decoration of ceramic Dutch tiles* *Katarzyna Kowalska, AFAW* *Room -1.14, Floor -1* 2. *Traditional stone carving methods* *Anna Duda-Maczuga, AFAW* *Room -1.03, Floor -1* 3. *Consolidation of flaking ground layer* *Julia Burdajewicz, AFAW* *Room 2.11, Floor 2A* 4. *Structures of woven textiles and their physics in practise* *Anna Konopko, AFAW* *Room 1.05, Floor 1A* 5. *Cyanotype as a historical photographic process/technique* *Dorota Dzik-Kruszelnicka, AFAW,* *Room 2.07, Floor 2A*
10:30-10:40	*Short break*
10:40-12:10	*Lab hands-on (parallel sessions 1, 2, 3, 4,5)*
12:10-12:20	*Short break*
12:20-13:50	*Lab hands-on (parallel sessions 1, 2, 3, 4,5)*
13:50-15:20	*Break for Lunch* *Nadwiślański Świt , Wybrzeże Kościuszkowskie 31/33, 00-379 Warszawa*
15:20-16:50	*Lab hands-on (parallel sessions 1, 2, 3, 4,5)*
16:50-17:00	*Short break*
17:00-18:30	*Lab hands-on (parallel sessions 1, 2, 3, 4,5)*

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DAY 4: Thursday 11 November 2021

Introduction to Conservation and Restoration Methods

9:00-10:30	Conservation Lab, hands-on (parallel sessions, duration 1h 30mins each) 1. *Restoration of Ceramics* *Katarzyna Kowalska, AFAW* *Room -1.14, Floor -1* 2. *Cleaning tests on plaster artifacts* *Anna Duda-Maczuga, AFAW* *Room -1.03, Floor -1* 3. *Cleaning tests on grime and varnish layers* *Julia Burdajewicz, AFAW* *Room 2.11, Floor 2A* 4. *Lining of textiles with the use of water dispersions of acrylic resins* *Anna Konopko, AFAW* *Room 1.05, Floor 1A* 5. *Paper-based objects: Flattening and matting with the use of self made photographic prints* *Dorota Dzik-Kruszelnicka, AFAW* *Room 2.07, Floor 2A*
10:30 -10:40	*Short break*
10:40 -12:10	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
12:10 -12:20	*Short break*
12:20 -13:50	Lab hands-on (parallel sessions 1, 2, 3, 4,5)

13:50-15:20 *Break for Lunch*
PoWiśle Wybrzeże Kościuszkowskie 43

15:20 -16:50	Lab hands-on (parallel sessions 1, 2, 3, 4,5)
16:50 -17:00	*Short break*
17:00 -18:30	Lab hands-on (parallel sessions 1, 2, 3, 4,5)

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Days 5-6 Using digital documentation techniques in everyday museum work on the example of Museum King Jans III's Palace at Wilanów

Venue: King Jan III's Palace at Wilanów,

Palace Main Gate and Orangery Building

(meeting point: Main Gate) ul. St. Kostki Potockiego 10/16, Warsaw

DAY 5: Friday 12 November 2021

First day at the castle about the need to create digital documentation of cultural heritage objects

09:00-09:15 , A brief introduction to the conservation program that has been underway for 15 years and the resulting digital documentation needs **Eryk Bunsch**

09:20-10:30 Tour of the Laboratory for 3D Documentation with a presentation of robotic workstations for creating three-dimensional documentation by scanning with structured lighting. Overview of hardware and software elements. Demonstration of an canvas paintings surface measurement workstation with the ability to collect 2D gigapixel data or 3D spatial surface documentation, **Eryk Bunsch, Kamil Radomski**

10:30-13:10 Performing sample measurements (using a small material samples 10 cm x 10 cm) using: two robotic 3D structured lighting scanning systems, portable 3D structured lighting scanning system and automated giga panorama system. Interactive Data Acquisition Workshop divided into four groups

1. *SAPO: gigapixel panorama and 3D topography*
   Kamil. Radomski, Wojciech Załuski
2. *Initial automated 3D scanning with structured lighting scanning (100 points/mm²)*
   Wojciech Storoż
3. *Precise automated 3D scanning with structured lighting scanning (2500 points/mm²)*
   DanielKarczmarczyk
4. *Portable, outdoor 3D scanning with structured lighting scanning (2500 points/mm²)*
   Krzysztof Lech

13:10-15:00 *Break for Lunch*

Tratoria Italiano „Milanovo", St. Kostki Potockiego 24G, 02-958 Warszawa

15:00-18:00 Measurement data processing and demonstration of practical application of various types of data in daily museum practice. Interactive Workshop Data Processing divided into four groups.

1. *SAPO: gigapixel panorama and 3D topography*
   Kamil Radomski, Wojciech Załuski
2. *Initial automated 3D scanning with structured lighting scanning (100 points/mm²)*
   Wojciech Storoż
3. *Precise automated 3D scanning with structured lighting scanning (2500 points/mm²)*
   Daniel Karczmarczyk
4. *Portable, outdoor 3D scanning with structured lighting scanning (2500 points/mm²)*
   Krzysztof Lech

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Venue: King Jan III's Palace at Wilanów,

Palace Main Building and Villa Intrata

ul. St. Kostki Potockiego 10/16, Warsaw

DAY 6: Saturday 13 November 2021

Second day at the castle -on experience with documentation projects carried out in the last 15 years

09:30-12:30 Visiting the museum exhibition in the Palace with a discussion of the documentation needs that have emerged from the conservation and educational projects implemented over the last 15 years. Interactive Tour at the exhibition of King Jan III's Palace Museum divided into two groups, Eryk Bunsch, Wojciech Storoż

12:30-13:00 *Break for Coffee (held at Villa Intrata)*

13:00-15:30 Presentation session in Villa Intrata *(held at Villa Intrata)*

1. Demonstration of the use of different types of digital techniques in documentation, conservation and education activities carried out in the different departments of the museum, presentation by Eryk Bunsch
2. Application of photogrammetric documentation to document architectural objects and use of these data in conjunction with a geographical information system GIS. Jakub Markiewicz
3. iArt- Wilanów Museum database system and problems in exchanging information between different museums, Eryk Bunsch,
4. Integrate different types of data into a museum-wide information system (museum inventory system, geographic information system software, digital visual documentation, measurement documentation and analytical methods). Today's opportunities and future plans, Eryk Bunsch

15:30-20:00 Wrap up discussion and Social Dinner

The social dinner will be prepared in cooperation with the Museum's Historical Reconstruction Department. Its employees, on the one hand, are engaged in finding and compiling old recipes. Like "Compendium Ferculorum albo zebranie potraw". "Compendium ferculorum or collection of dishes" by Stanisław Czerniecki - chef of the Krakow Voivode Aleksander Michał Lubomirski was the first Polish cookbook to be printed. The work was published in 1682.

On the other hand employees of this department prepare dishes following all the rules of Old Polish cuisine.

"It is now widely acknowledged that food culture is an important intangible aspect of European heritage and mechanisms for the integration this knowledge into the wider understanding of heritage have recently come into sharper focus. Thanks to a greater emphasis on sensory exploration we can come closer to a greater understanding of the role of food in the past," said the jury of European Heritage Awards in 2019 talking about a Wilanów project "A Place at the Royal Table"

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P R O G R A M – LAB SESSIONS

Days 1 and 2: Multimodal Data Acquisition and Processing

Group	Members
Group 1	ESR 1 – Agnese Babini ESR 10 – Jan Cutajar ESR 11 – Silvia Russo
Group 2	ESR 6 – Jizhen Cai ESR12 – Deepshikha Sharma ESR13 – Alessandra Marrocchesi
Group 3	ESR 3 – Evdokia Saiti ESR15 – Amalia Siatou ESR 14 – Anna Zuber
Group 4	ESR 8 – David Lewis ESR 9 – Ramamoorthy Luxman ESR 7 – Yoko Arteaga ESR 2 – Dipendra Mandal
Group 5	Federico Grillini Markus Sebastian Bakken Storeide Yuli Castro

DAY 1: Monday 8 November 2021 2D/3D/4D Multimodal Data Acquisition

Time Slot	Group 1	Group 2	Group 3	Group 4	Group 5
9:00- 10.30	**CT** Room 4	**WLI** Room 503	**SL3D** Room 503	**SfM** Room 517	**DIC** Room 512
10.30- 12:00	**WLI** Room 503	**SL3D** Room 503	**SfM** Room 517	**DIC** Room 512	**CT** Room 4
12:00-13.30	**SL3D** Room 503	**SfM** Room 517	**DIC** Room 512	**CT** Room 4	**WLI** Room 503
15:00-16:30	**SfM** Room 517	**DIC** Room 512	**CT** Room 4	**WLI** Room 503	**SL3D** Room 503
16.30-18:00	**DIC** Room 512	**CT** Room 4	**WLI** Room 503	**SL3D** Room 503	**SfM** Room 517

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DAY 2: Tuesday 9 November 2021 **2D/3D/4D Multimodal Data Processing**

Time Slot	Group 1	Group 2	Group 3	Group 4	Group 5
9:00- 10.05	**3D processing Agisoft** Room 517	**Multimodal Data Integration FRAMES** Room 517	**SL3D Segmentation** Room 517	**3D processing Open Source** Room 517	**DIC** Room 512
10.05- 11:10	**Multimodal Data Integration FRAMES** Room 517	**SL3D Segmentation** Room 517	**3D processing Open Source** Room 517	**DIC** Room 512	**3D processing Agisoft** Room 517
11:10-12.15	**SL3D Segmentation** Room 517	**3D processing Open Source** Room 517	**DIC** Room 512	**3D processing Agisoft** Room 517	**Multimodal Data Integration FRAMES** Room 517
12:15-13:20	**3D processing Open Source** Room 517	**DIC** Room 512	**3D processing Agisoft** Room 517	**Multimodal Data Integration FRAMES** Room 517	**SL3D Segmentation** Room 517
15.00-16:05	**DIC** Room 512	**3D processing Agisoft** Room 517	**Multimodal Data Integration FRAMES** Room 517	**SL3D Segmentation** Room 517	**3D processing Open Source** Room 517

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Days 3 and 4: Introduction to Conservation and Restoration Methods

Group	Members
Group 1	ESR 1 – Agnese Babini ESR 10 – Jan Cutajar ESR 11 – Silvia Russo ESR15 – Amalia Siatou
Group 2	ESR 6 – Jizhen Cai ESR12 – Deepshikha Sharma ESR13 – Alessandra Marrocchesi
Group 3	ESR 3 – Evdokia Saiti ESR 4 – Sunita Saha ESR 5 – Athanasia Papanikolaou ESR 14 – Anna Zuber
Group 4	ESR 8 – David Lewis ESR 9 – Ramamoorthy Luxman ESR 7 – Yoko Arteaga ESR 2 – Dipendra Mandal
Group 5	Federico Grillini Markus Sebastian Bakken Storeide Yuli Castro

DAY 3: Tuesday 9 November 2021 — Introduction to Conservation and Restoration Methods

Time Slot

	Group 1	Group 2	Group 3	Group 4	Group 5
9:00- 10.30	**Decoration of ceramic Dutch tiles** Room -1.14, Floor -1	**Traditional stone carving methods** Room -1.03, Floor -1	**Consolidation of flaking ground layer** Room 2.11, Floor 2A	**Cyanotype as a historical photographic process/technique** Room 2.07, Floor 2A	**Structures of woven textiles and their physics in practice** Room 1.05, Floor 1A
10.40- 12:10	**Traditional stone carving methods** Room -1.03, Floor -1	**Consolidation of flaking ground layer** Room 2.11, Floor 2A	**Cyanotype as a historical photographic process/technique** Room 2.07, Floor 2A	**Structures of woven textiles and their physics in practice** Room 1.05, Floor 1A	**Decoration of ceramic Dutch tiles** Room -1.14, Floor -1
12:20-13.50	**Consolidation of flaking ground layer** Room 2.11, Floor 2A	**Cyanotype as a historical photographic process/technique** Room 2.07, Floor 2A	**Structures of woven textiles and their physics in practice** Room 1.05, Floor 1A	**Decoration of ceramic Dutch tiles** Room -1.14, Floor -1	**Traditional stone carving methods** Room -1.03, Floor -1
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17.00-18:30	**Structures of woven textiles and their physics in practice** Room 1.05, Floor 1A	**Decoration of ceramic Dutch tiles** Room -1.14, Floor -1	**Traditional stone carving methods** Room -1.03, Floor -1	**Consolidation of flaking ground layer** Room 2.11, Floor 2A	**Cyanotype as a historical photographic process/technique** Room 2.07, Floor 2A

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DAY 4: Tuesday 9 November 2021 — Introduction to Conservation and Restoration Methods

Time Slot

	Group 1	Group 2	Group 3	Group 4	Group 5
9:00- 10.30	**Restoration of Ceramics** Room -1.14, Floor -1	**Cleaning tests on plaster artifacts** Room -1.03, Floor -1	**Cleaning tests on grime and varnish layers** Room 2.11, Floor 2A	**Paper-based objects: flattening and matting with the use of self made photographic prints of** Room 2.07, Floor 2A	**Lining of textiles with the use of water dispersions of acrylic resins** Room 1.05, Floor 1A
10:40- 12:10	**Cleaning tests on plaster artifacts** Room -1.03, Floor -1	**Cleaning tests on grime and varnish layers** Room 2.11, Floor 2A	**Paper-based objects: flattening and matting with the use of self made photographic prints** Room 2.07, Floor 2A	**Lining of textiles with the use of water dispersions of acrylic resins** Room 1.05. Floor 1A	**Restoration of Ceramics** Room -1.14, Floor -1
12:20-13.50	**Cleaning tests on grime and varnish layers** Room 2.11, Floor 2A	**Paper-based objects: flattening and matting with the use of self made photographic prints** Room 2.07 Floor 2A	**Lining of textiles with the use of water dispersions of acrylic resins** Room 1.05, Floor 1A	**Restoration of Ceramics** Room -1.14, Floor -1	**Cleaning tests on plaster artifacts** Room -1.03, Floor -1
15:20-16:50	**Paper based objects: Flattening and matting with th use of self made photographic prints** Room 2.07, Floor 2A	**Lining of textiles with the use of water dispersions of acrylic resins** Room 1.05, Floor 1A	**Restoration of Ceramics** Room -1.14, Floor -1	**Cleaning tests on plaster artifacts** Room -1.03, Floor -1	**Cleaning tests on grime and varnish layers** Room 2.11, Floor 2A
17.00-18:30	**Lining of textiles with the use of water dispersions of acrylic resins** Room 1.05, Floor 1A	**Restoration of Ceramics** Room -1.14, Floor -1	**Cleaning tests on plaster artifacts** Room -1.03, Floor -1	**Cleaning tests on grime and varnish layers** Room 2.11, Floor 2A	**Paper-based objects: flattening and matting with the use of self made photographic prints** Room 2.07, Floor 2A

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DAY 5: Digital documentation techniques in everyday museum work

Group	Members
Group 1	ESR 1 – Agnese Babini ESR 10 – Jan Cutajar ESR 11 – Silvia Russo ESR15 – Amalia Siatou Federico Grillini
Group 2	ESR 6 – Jizhen Cai ESR12 – Deepshikha Sharma ESR13 – Alessandra Marrocchesi Markus Sebastian Bakken Storeide
Group 3	ESR 3 – Evdokia Saiti ESR 4 – Sunita Saha ESR 5 – Athanasia Papanikolaou ESR 14 – Anna Zuber Yuli Castro
Group 4	ESR 8 – David Lewis ESR 9 – Ramamoorthy Luxman ESR 7 – Yoko Arteaga ESR 2 – Dipendra Mandal

DAY 5: Morning Session

Time Slot	Group 1	Group 2	Group 3	Group 4
10.30 - 11:10	**SAPO: gigapixel panorama and 3D topography of canvas paintings** Laboratory for 3D Documentation	**Initial automated 3D measurement with structured lighting scanning (100 points/mm²)** Laboratory for 3D Documentation	**Precise automated 3D scanning with structured lighting scanning (2500 points/mm²)** Laboratory for 3D Documentation	**Portable, outdoor 3D measurement with structured lighting scanning (2500 points/mm²)** Annex of the orangery building or outside if the weather will be nice
11:10-11:50	**Precise automated 3D measurement with structured lighting scanning (2500 points/mm²)** Laboratory for 3D Documentation	**SAPO: gigapixel panorama and 3D topography** of canvas paintings Laboratory for 3D Documentation	**Portable, outdoor 3D measurement with structured lighting scanning (2500 points/mm²)** Annex of the orangery building or outside if the weather will be nice	**Initial automated 3D measurement with structured lighting scanning (100 points/mm²)** Laboratory for 3D Documentation
11:50 – 12:30	**Initial automated 3D measurement with structured lighting scanning (100 points/mm²)** Laboratory for 3D Documentation	**Portable, outdoor 3D measurement with structured lighting scanning (2500 points/mm²)** Annex of the orangery building or outside if the weather will be nice	**SAPO: gigapixel panorama and 3D topography** of canvas paintings Laboratory for 3D Documentation	**Precise automated 3D measurement with structured lighting scanning (2500 points/mm²)** Laboratory for 3D Documentation

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12:30 – 13:10	**Portable, outdoor 3D measurement with structured lighting scanning (2500 points/mm²)** Annex of the orangery building or outside if the weather will be nice	**Precise automated 3D measurement with structured lighting scanning (2500 points/mm²)** Laboratory for 3D Documentation	**Initial automated 3D measurement with structured lighting scanning (100 points/mm²)** Laboratory for 3D Documentation	**SAPO: gigapixel panorama and 3D topography of canvas paintings** Laboratory for 3D Documentation

DAY 5: Afternoon Session

Time Slot	Group 1	Group 2	Group 3	Group 4
15.00 - 15:45	**Processing of 3D measurement data** Data postprocessing room (2nd floor of containers)	**Processing of 3D measurement data** Laboratory for 3D Documentation	**Gigapixel documentation data postprocessing** Laboratory for 3D Documentation	**Processing of 3D measurement data** Data postprocessing room (2nd floor of containers)
15:45-16:30	**Processing of 3D measurement data** Laboratory for 3D Documentation	**Gigapixel documentation data postprocessing** Laboratory for 3D Documentation	**Processing of 3D measurement data** Data postprocessing room (2nd floor of containers)	**Processing of 3D measurement data** Laboratory for 3D Documentation
16:30 – 17:15	**Gigapixel documentation data postprocessing** Laboratory for 3D Documentation	**Processing of 3D measurement data** Data postprocessing room (2nd floor of containers)	**Processing of 3D measurement data** Laboratory for 3D Documentation	**Processing of 3D measurement data** Laboratory for 3D Documentation
17:15 – 18:00	**Processing of 3D measurement data** Data postprocessing room (2nd floor of containers)	**Processing of 3D measurement data** Laboratory for 3D Documentation	**Processing of 3D measurement data** Laboratory for 3D Documentation	**Gigapixel documentation data postprocessing** Laboratory for 3D Documentation

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Social Dinner (Day 6)

Menu

VILLA INTRATA

MENU

Fried sturgeon with homemade parsnip

Baked pumpkin soup with smoked cottage cheese and black cumin

Turkey and guinea fowl fried in baked onion dough

King Jan's dessert /Arkas/ on plums with melons and baked figs

VILLA INTRATA

VEGAN MENU

Fried sturgeon with homemade parsnip

Baked pumpkin soup with smoked cottage cheese and black cumin

„Figatelle" with millet and sunflower seeds, served with baked celery cream

King Jan's dessert /Arkas/ on plums with melons and baked figs

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