

## Course: ROBOTICS AND INTELLIGENT MACHINES

**Dottorato di "interesse nazionale" in agreement with** Università di PISA, Università degli Studi della BASILICATA, Università degli Studi di FERRARA, Università degli Studi di SIENA, Università degli Studi di TRENTO, Università "Campus Bio-Medico" di ROMA, Politecnico di BARI, Università degli Studi di MILANO-BICOCCA, Università della CALABRIA, Università degli Studi di FIRENZE, Università del SALENTO, Università degli Studi di UDINE, Università degli Studi di PADOVA, Libera Università di BOLZANO, Università degli Studi di CATANIA, Università degli Studi di ROMA "La Sapienza", Università degli Studi della Campania "Luigi Vanvitelli", Università degli Studi di PALERMO, Politecnico di TORINO, Università Politecnica delle MARCHE, Università degli Studi di MODENA e REGGIO EMILIA, Università degli Studi di BOLOGNA, Istituto Italiano di Tecnologia (IIT) and Consiglio Nazionale delle Ricerche (CNR).

## Curriculum: HOSTILE AND UNSTRUCTURED ENVIRONMENTS (CODICE 9347)

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| <b>Coordinator:</b> Cannata Giorgio   |  |
| Department of IT, Bioengineering, Robotics and Systems Engineering (Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi – DIBRIS)   |  |
| <b>Places:</b> 6 – <b>Grants:</b> 6 (*)   |  |
| <p>(*) 2 doctorate grants fully funded by the associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 2 grants funded within D.M. 351/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 1 industrial doctorate grant fully funded by companies on behalf and associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 1 grant cofunded by MUR/DIBRIS, the gross annual amount of the scholarship is € 16.500,00 including social security contributions charged to the scholarship recipient.</p> |  |
| <b>Comparative assessment procedure</b>   | <p><b><u>QUALIFICATIONS/PUBLICATIONS AND INTERVIEW</u></b></p> <p><b><u>july 25th at 9:30</u></b></p> <p>Candidates are ranked separately for each research theme they applied.</p> <p><b>Step 1 – Assessment of qualifications</b> (maximum 60 points).<br/>Candidates are ranked on the basis (not in order or relevance) of their student career, Curriculum Vitae, motivation letter, qualified scientific and technical skills, endorsement letters.</p> <p>Candidates are admitted to Step 2 if their score is greater than or equal to 40 points.</p> <p><b>Step 2 – Oral examination</b> (maximum 60 points).<br/>The Candidates are expected to discuss about their qualifications and scientific and technical skills, and to show their motivation and attitude for scientific research. Then they are interviewed on the research theme(s) they have applied for (see below) receiving a specific score for each interview.</p> <p>The oral examination for each research theme is passed if the score is greater than or equal to 40 points.</p> <p>The final score is the sum of the scores in Step 1 and Step 2 (for each research theme the candidate applied to).</p> |
| <b>Further information on how to present qualifications/publications</b>  | <p>Candidates <b>must</b>:</p> <ul style="list-style-type: none"> <li>– submit the <b>complete list of all the exams sat during their Bachelor’s and Master’s degree</b> and/or equivalents (BS, Master) specifying the average marks (GPA or equivalent indicator);</li> <li>– specify <b>up to three research themes</b> of their interest (see the research themes listed below and at <a href="http://i-rim.it">Admission – Drim – Irim (i-rim.it)</a>);</li> <li>– submit a <b>motivation letter</b> (Research project) related to one (or more) of the research themes selected; use the template available at: <a href="http://i-rim.it">Admission – Drim – Irim (i-rim.it)</a> ;</li> <li>– submit a <b>Curriculum Vitae</b> including all the technical scientific studies/activities already done and pertinent to the doctoral program;</li> <li>– submit <b>up to 3 recommendation letters</b> from university professors or recognized experts in the field supporting the candidate;</li> </ul>  |
| <b>Research Themes</b>  | 1. AI methods for Robots in Unstructured Environments – Italian Inst. of Technology  |

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|                                  | <p>2. Detection and tracking of obstacles for autonomous marine vehicles – Univ. Genova</p> <p>3. End-to-end structured design methodologies for safe adaptive robots – Univ. Genova</p> <p>4. Social perception in unstructured environments – Univ. Milano Bicocca</p> <p>5. Soft growing and adaptable robots for exploration of extreme environments – Italian Inst. of Technology</p> <p>6. Traversability for Mobile Robots in Hostile and Unstructured Environments – Univ. Catania</p> <p>For a complete description of the research themes proposed check:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></p>  |
| <b>Information on references</b> | <p>Candidates must choose no more than three recommenders to endorse their candidature. The recommenders must be university professors or recognized experts in the field, and must upload the recommendation letters (specifying their name, role and affiliation), within the deadline of the public notice, to: <a href="https://forms.gle/TT4UwLqrj88Cban6">https://forms.gle/TT4UwLqrj88Cban6</a></p>   |
| <b>Foreign Languages</b>         | <p>English</p>   |
| <b>Further Information</b>       | <p>For more information about</p> <ul style="list-style-type: none"> <li>- the research themes please check the contact person indicated in the project themes description file available at:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></li> <li>- the doctorate rules and structure please check:<br/> <a href="#">RULES – Drim – Irim (i-rim.it)</a><br/> <a href="#">CURRICULA AND THEMES – Drim – Irim (i-rim.it)</a></li> <li>- other enquiries contact the Doctorate Secretary:<br/> <a href="mailto:phd_drim@unige.it">phd_drim@unige.it</a></li> </ul> <p>A step-by-step guideline for the application is available here:<br/> <a href="https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf">https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf</a></p> |

## Corso: ROBOTICS AND INTELLIGENT MACHINES

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### Curriculum: INDUSTRY 4.0 (CODICE 9348)

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|---|--|
| <b>Coordinator:</b> Cannata Giorgio   |  |
| Department of IT, Bioengineering, Robotics and Systems Engineering (Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi – DIBRIS)   |  |
| <b>Places:</b> 14 – <b>Grants:</b> 14 (*)   |  |
| <p>(*) 6 doctorate grants fully funded by the associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 5 grants funded within D.M. 351/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 3 grants funded within D.M. 352/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> |  |
| <b>Comparative assessment procedure</b>   | <p><b><u>QUALIFICATIONS/PUBLICATIONS AND INTERVIEW</u></b></p> <p><b><u>july 25th at 9:30</u></b></p> <p>Candidates are ranked separately for each research theme they applied.</p> <p><b>Step 1 – Assessment of qualifications</b> (maximum 60 points).<br/>Candidates are ranked on the basis (not in order or relevance) of their student career, Curriculum Vitae, motivation letter, qualified scientific and technical skills, endorsement letters.</p> <p>Candidates are admitted to Step 2 if their score is greater than or equal to 40 points.</p> <p><b>Step 2 – Oral examination</b> (maximum 60 points).<br/>The Candidates are expected to discuss about their qualifications and scientific and technical skills, and to show their motivation and attitude for scientific research. Then they are interviewed on the research theme(s) they have applied for (see below) receiving a specific score for each interview.</p> <p>The oral examination for each research theme is passed if the score is greater than or equal to 40 points.</p> <p>The final score is the sum of the scores in Step 1 and Step 2 (for each research theme the candidate applied to).</p> |
| <b>Further information on how to present qualifications/publications</b>  | <p>Candidates <b>must</b>:</p> <ul style="list-style-type: none"> <li>– submit the <b>complete list of all the exams sat during their Bachelor's and Master's degree</b> and/or equivalent (BS, Master) specifying the average marks (GPA or equivalent indicator);</li> <li>– specify <b>up to three research themes</b> of their interest (see the research themes listed below and at <a href="#">Admission – Drim – Irim (i-rim.it)</a>);</li> <li>– submit a <b>motivation letter</b> (Research project) related to one (or more) of the research themes selected; use the template available at: <a href="#">Admission – Drim – Irim (i-rim.it)</a> ;</li> <li>– submit a <b>Curriculum Vitae</b> including all the technical scientific studies/activities already done and pertinent to the doctoral program;</li> <li>– submit <b>up to 3 recommendation letters</b> from university professors or recognized experts in the field supporting the candidate;</li> </ul>   |
| <b>Research Themes</b>  | <ol style="list-style-type: none"> <li>1. Mechatronic Technologies for the Smart Factory - Intellimech &amp; Univ. Pisa</li> <li>2. Mechatronic Technologies for Intelligent Machines - Intellimech &amp; Univ. Pisa</li> <li>3. Swarms of Heterogeneous Soft Robots - National Research Council - ISTC</li> <li>4. Planning and coordination of collaborative robot teams for manufacturing applications -</li> </ol>   |

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|                                  | <p>National Research Council – STIIMA</p> <ol style="list-style-type: none"> <li>5. Intelligent Machines for small batch production - National Research Council – STIIMA</li> <li>6. New protocols and control algorithms for closer human-robot cooperation - Polytechnic University of Marche</li> <li>7. Cooperative and collaborative control for mobile manipulators – Univ. Basilicata</li> <li>8. Learning and Control Methods for Autonomous Robots in Complex Industrial Scenarios – Univ. of Bologna</li> <li>9. Development of CAE-based tools for electronic cams optimization – Univ. Genova</li> <li>10. Multimodal Sensing for Robot Self-aware Control – Univ. Genova</li> <li>11. Human-Robot Interaction for Industry 4.0 and Service Robotics – Univ. Napoli Federico II</li> <li>12. Optimization of collaborative robotic assembly tasks – Univ. Padova</li> <li>13. Planning and control strategies for robotic manipulators embedding elastic elements for efficient manipulation – Univ. Pisa</li> <li>14. Robotic trajectory planning for industrial sustainability – Univ. Udine</li> <li>15. Advanced Human-Robot Interaction and Collaboration – Italian Inst. Of Technology.</li> </ol> <p>For a complete description of the research themes proposed check:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></p> |
| <b>Information on references</b> | <p>Candidates must choose no more than three recommenders to endorse their candidature. The recommenders must be university professors or recognized experts in the field, and must upload the recommendation letters (specifying their name, role and affiliation), within the deadline of the public notice, to: <a href="https://forms.gle/TT4UwLqrjF88Cban6">https://forms.gle/TT4UwLqrjF88Cban6</a></p>  |
| <b>Foreign Languages</b>         | <p>English</p>  |
| <b>Further Information</b>       | <p>For more information about</p> <ul style="list-style-type: none"> <li>- the research themes please check the contact person indicated in the project themes description file available at:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></li> <li>- the doctorate rules and structure please check:<br/> <a href="#">RULES – Drim – Irim (i-rim.it)</a><br/> <a href="#">CURRICULA AND THEMES – Drim – Irim (i-rim.it)</a></li> <li>- for other enquiries contact the Doctorate Secretary:<br/> <a href="mailto:phd_drim@unige.it">phd_drim@unige.it</a></li> </ul> <p>A step-by-step guideline for the application is available here:<br/> <a href="https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf">https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf</a></p>  |

## Corso: ROBOTICS AND INTELLIGENT MACHINES

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### Curriculum: INSPECTION AND MAINTENANCE OF INFRASTRUCTURES (CODICE 9349)

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|---|--|
| <b>Coordinator:</b> Cannata Giorgio   |  |
| Department of IT, Bioengineering, Robotics and Systems Engineering (Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi – DIBRIS)   |  |
| <b>Places: 5 – Grants: 5 (*)</b>  |  |
| (*) 2 doctorate grants fully funded by the associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.<br>(*) 3 grants funded within D.M. 351/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00. |  |
| <b>Comparative assessment procedure</b>   | <p><b><u>QUALIFICATIONS/PUBLICATIONS AND INTERVIEW</u></b></p> <p><b><u>july 25th at 9:30</u></b></p> <p>Candidates are ranked separately for each research theme they applied.</p> <p><b>Step 1 – Assessment of qualifications</b> (maximum 60 points).<br/>Candidates are ranked on the basis (not in order or relevance) of their student career, Curriculum Vitae, motivation letter, qualified scientific and technical skills, endorsement letters.</p> <p>Candidates are admitted to Step 2 if their score is greater than or equal to 40 points.</p> <p><b>Step 2 – Oral examination</b> (maximum 60 points).<br/>The Candidates are expected to discuss about their qualifications and scientific and technical skills, and to show their motivation and attitude for scientific research. Then they are interviewed on the research theme(s) they have applied for (see below) receiving a specific score for each interview.</p> <p>The oral examination for each research theme is passed if the score is greater than or equal to 40 points.</p> <p>The final score is the sum of the scores in Step 1 and Step 2 (for each research theme the candidate applied to).</p> |
| <b>Further information on how to present qualifications/publications</b>  | <p>Candidates <b>must</b>:</p> <ul style="list-style-type: none"> <li>– submit the <b>complete list of all the exams sat during their Bachelor's and Master's degree</b> and/or equivalents (BS, Master) specifying the average marks (GPA or equivalent indicator);</li> <li>– specify <b>up to three research themes</b> of their interest (see the research themes listed below and at <a href="http://i-rim.it">Admission – Drim – Irim (i-rim.it)</a>);</li> <li>– submit a <b>motivation letter</b> (Research project) related to one (or more) of the research themes selected; use the template available at: <a href="http://i-rim.it">Admission – Drim – Irim (i-rim.it)</a> ;</li> <li>– submit a <b>Curriculum Vitae</b> including all the technical scientific studies/activities already done and pertinent to the doctoral program;</li> <li>– submit <b>up to 3 recommendation letters</b> from university professors or recognized experts in the field supporting the candidate;</li> </ul>  |
| <b>Research Themes</b>  | <ol style="list-style-type: none"> <li>1. Robotic based underwater shallow water infrastructure inspection - Univ. Genova</li> <li>2. Autonomous quadrupeds to improve public infrastructures resilience - Univ. Genova</li> <li>3. Development and experimentation of a Reconfigurable Underwater Vehicle for Inspection, Free-floating Intervention and Survey Tasks - Univ. Firenze</li> <li>4. Human-centric, interactive, personal robotics - Univ. Pisa</li> <li>5. Deep learning models for quality control and anomaly detection in Industry 4.0 - CNR</li> </ol>  |

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|                                  | <p>STIIMA</p> <p>For a complete description of the research themes proposed check:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></p>   |
| <b>Information on references</b> | <p>Candidates must choose no more than three recommenders to endorse their candidature. The recommenders must be university professors or recognized experts in the field, and must upload the recommendation letters (specifying their name, role and affiliation), within the deadline of the public notice, to: <a href="https://forms.gle/TT4UwLqrjf88Cban6">https://forms.gle/TT4UwLqrjf88Cban6</a></p>   |
| <b>Foreign Languages</b>         | <p>English</p>   |
| <b>Further Information</b>       | <p>For more information about</p> <ul style="list-style-type: none"> <li>- the research themes please check the contact person indicated in the project themes description file available at:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></li> <li>- the doctorate rules and structure please check:<br/> <a href="#">RULES – Drim – Irim (i-rim.it)</a><br/> <a href="#">CURRICULA AND THEMES – Drim – Irim (i-rim.it)</a></li> <li>- for other enquiries contact the Doctorate Secretary:<br/> <a href="mailto:phd_drim@unige.it">phd_drim@unige.it</a></li> </ul> <p>A step-by-step guideline for the application is available here:<br/> <a href="https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf">https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf</a></p> |

## Corso: ROBOTICS AND INTELLIGENT MACHINES

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### Curriculum: AGRIFOOD (CODICE 9350)

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| <b>Coordinator:</b> Cannata Giorgio  |  |
| Department of IT, Bioengineering, Robotics and Systems Engineering (Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi – DIBRIS)  |  |
| <b>Places:</b> 5 – <b>Grants:</b> 5 (*)  |  |
| (*) 3 grants funded within D.M. 351/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.<br>(*) 2 grants funded within D.M. 352/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00. |  |
| <b>Comparative assessment procedure</b>  | <p><b><u>QUALIFICATIONS/PUBLICATIONS AND INTERVIEW</u></b></p> <p><b><u>july 25th at 9:30</u></b></p> <p>Candidates are ranked separately for each research theme they applied.</p> <p><b>Step 1 – Assessment of qualifications</b> (maximum 60 points).<br/>Candidates are ranked on the basis (not in order or relevance) of their student career, Curriculum Vitae, motivation letter, qualified scientific and technical skills, endorsement letters.</p> <p>Candidates are admitted to Step 2 if their score is greater than or equal to 40 points.</p> <p><b>Step 2 – Oral examination</b> (maximum 60 points).<br/>The Candidates are expected to discuss about their qualifications and scientific and technical skills, and to show their motivation and attitude for scientific research. Then they are interviewed on the research theme(s) they have applied for (see below) receiving a specific score for each interview.</p> <p>The oral examination for each research theme is passed if the score is greater than or equal to 40 points.</p> <p>The final score is the sum of the scores in Step 1 and Step 2 (for each research theme the candidate applied to).</p> |
| <b>Further information on how to present qualifications/publications</b>   | <p>Candidates <b>must</b>:</p> <ul style="list-style-type: none"> <li>– submit the <b>complete list of all the exams sat during their Bachelor's and Master's degree</b> and/or equivalents (BS, Master) specifying the average marks (GPA or equivalent indicator);</li> <li>– specify <b>up to three research themes</b> of their interest (see the research themes listed below and at <a href="http://Admission – Drim – Irim (i-rim.it)">Admission – Drim – Irim (i-rim.it)</a>);</li> <li>– submit a <b>motivation letter</b> (Research project) related to one (or more) of the research themes selected; use the template available at: <a href="http://Admission – Drim – Irim (i-rim.it)">Admission – Drim – Irim (i-rim.it)</a> ;</li> <li>– submit a <b>Curriculum Vitae</b> including all the technical scientific studies/activities already done and pertinent to the doctoral program;</li> <li>– submit <b>up to 3 recommendation letters</b> from university professors or recognized experts in the field supporting the candidate;</li> </ul>  |
| <b>Research Themes</b>   | <ol style="list-style-type: none"> <li>1. Virtual and Physical Prototyping of Sensorized Compliant Grippers - Univ. Genova</li> <li>2. Fresh Food Handling - Univ. Campania Luigi Vanvitelli</li> <li>3. Automation of poultry and pig farms always having animal welfare as the goal - Univ. Catania</li> <li>4. Design of poultry and pig farms always having animal welfare as the goal - Univ. Catania</li> <li>5. Autonomous Robotics for mountain agriculture - Univ. Trento</li> </ol>  |

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|                                  | For a complete description of the research themes proposed check:<br><a href="#">Admission – Drim – Irim (i-rim.it)</a>  |
| <b>Information on references</b> | Candidates must choose no more than three recommenders to endorse their candidature. The recommenders must be university professors or recognized experts in the field, and must upload the recommendation letters (specifying their name, role and affiliation), within the deadline of the public notice, to: <a href="https://forms.gle/TT4UwLqrjf88Cban6">https://forms.gle/TT4UwLqrjf88Cban6</a>  |
| <b>Foreign Languages</b>         | English  |
| <b>Further Information</b>       | For more information about <ul style="list-style-type: none"> <li>- the research themes please check the contact person indicated in the project themes description file available at:<br/><a href="#">Admission – Drim – Irim (i-rim.it)</a></li> <li>- the doctorate rules and structure please check:<br/><a href="#">RULES – Drim – Irim (i-rim.it)</a><br/><a href="#">CURRICULA AND THEMES – Drim – Irim (i-rim.it)</a></li> <li>- for other enquiries contact the Doctorate Secretary:<br/><a href="mailto:phd_drim@unige.it">phd_drim@unige.it</a></li> </ul> <p>A step-by-step guideline for the application is available here:<br/><a href="https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf">https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf</a></p> |



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### Curriculum: HEALTHCARE AND WELLNESS OF PERSONS (CODICE 9351)

|   |  |
|---|--|
| <b>Coordinator:</b> Cannata Giorgio   |  |
| Department of IT, Bioengineering, Robotics and Systems Engineering (Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi – DIBRIS)   |  |
| <b>Places:</b> 20 – <b>Grants:</b> 20 (*)   |  |
| <p>(*) 8 doctorate grants fully funded by the associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 6 grants funded within D.M. 351/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> <p>(*) 6 grants funded within D.M. 352/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.</p> |  |
| <b>Comparative assessment procedure</b>   | <p><b><u>QUALIFICATIONS/PUBLICATIONS AND INTERVIEW</u></b></p> <p><b><u>july 25th at 9:30</u></b></p> <p>Candidates are ranked separately for each research theme they applied.</p> <p><b>Step 1 – Assessment of qualifications</b> (maximum 60 points).<br/>Candidates are ranked on the basis (not in order or relevance) of their student career, Curriculum Vitae, motivation letter, qualified scientific and technical skills, endorsement letters.</p> <p>Candidates are admitted to Step 2 if their score is greater than or equal to 40 points.</p> <p><b>Step 2 – Oral examination</b> (maximum 60 points).<br/>The Candidates are expected to discuss about their qualifications and scientific and technical skills, and to show their motivation and attitude for scientific research. Then they are interviewed on the research theme(s) they have applied for (see below) receiving a specific score for each interview.</p> <p>The oral examination for each research theme is passed if the score is greater than or equal to 40 points.</p> <p>The final score is the sum of the scores in Step 1 and Step 2 (for each research theme the candidate applied to).</p> |
| <b>Further information on how to present qualifications/publications</b>  | <p>Candidates <b>must</b>:</p> <ul style="list-style-type: none"> <li>– submit the <b>complete list of all the exams sat during their Bachelor's and Master's degree</b> and/or equivalent (BS, Master) specifying the average marks (GPA or equivalent indicator);</li> <li>– specify <b>up to three research themes</b> of their interest (see the research themes listed below and at <a href="#">Admission – Drim – Irim (i-rim.it)</a>);</li> <li>– submit a <b>motivation letter</b> (Research project) related to one (or more) of the research themes selected; use the template available at: <a href="#">Admission – Drim – Irim (i-rim.it)</a> ;</li> <li>– submit a <b>Curriculum Vitae</b> including all the technical scientific studies/activities already done and pertinent to the doctoral program;</li> <li>– submit <b>up to 3 recommendation letters</b> from university professors or recognized experts in the field supporting the candidate;</li> </ul>   |
| <b>Research Themes</b>  | <ol style="list-style-type: none"> <li>1. AI-based neuromodulation for controlling neuronal activity - Univ. Genova</li> <li>2. Study and development of a highly ergonomic wearable device for movement and posture assessment in rehabilitation, work, and sports - SWHARD-Univ. Genova</li> <li>3. Virtual reality and robotic integration to assess human vestibular performance - MOVENDO-Univ. Genova</li> </ol>   |

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|                                  | <ol style="list-style-type: none"> <li>4. Advanced computer-vision techniques in body machine interfaces for rehabilitation and assistance of people with neurological diseases - MOVENDO-Univ. Genova</li> <li>5. Diversity-Aware Social Robots for Education and Social Assistance - Scuola di Robotica-Univ. Genova</li> <li>6. Legal issues of Robotics and Intelligent machine in medicine and healthcare - Univ. Genova</li> <li>7. Design and Operation Methodologies for Upper-Limb Exoskeletons - Univ. Calabria</li> <li>8. Social robot assistant for intelligent health care - Univ. Palermo</li> <li>9. Robot assisted rehabilitation for older adults after strokes or traumatic events - Univ. Trento</li> <li>10. Robotics enhanced by IoT and AI for healthcare 4.0 - Univ. Campus Bio-Medico Roma</li> <li>11. Magnetic multi-robot system control - Scuola Sup. S. Anna Pisa</li> <li>12. Intelligent Microscale Robots - Scuola Sup. S. Anna Pisa</li> <li>13. Sensing for Medical Robotics - Scuola Sup. S. Anna Pisa</li> <li>14. Robotics for healthcare - Politecnico Torino</li> <li>15. Bio-inspired friction-based self-locomoting soft microbot - Univ. Salento</li> <li>16. Sensorimotor interfaces and control for human-robot collaboration - Univ. Siena</li> <li>17. Sensorimotor interfaces and control for human-robot augmentation - Univ. Siena</li> <li>18. Human-robot coexistence and interaction in robot-assisted medical procedures - Univ. Roma La Sapienza</li> <li>19. Artificial Intelligence methods and Robotic Assistance in Surgical Procedures - Univ. Modena e Reggio Emilia</li> <li>20. Motion and action prediction for human-robot collaboration facilitated by body signals and context - Univ. Bolzano</li> </ol> <p>For a complete description of the research themes proposed check:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></p> |
| <b>Information on references</b> | <p>Candidates must choose no more than three recommenders to endorse their candidature. The recommenders must be university professors or recognized experts in the field, and must upload the recommendation letters (specifying their name, role and affiliation), within the deadline of the public notice, to: <a href="https://forms.gle/TT4UwLqrjf88Cban6">https://forms.gle/TT4UwLqrjf88Cban6</a></p>  |
| <b>Foreign Languages</b>         | English   |
| <b>Further Information</b>       | <p>For more information about</p> <ul style="list-style-type: none"> <li>- the research themes please check the contact person indicated in the project themes description file available at:<br/><a href="#">Admission – Drim – Irim (i-rim.it)</a></li> <li>- the doctorate rules and structure please check:<br/><a href="#">RULES – Drim – Irim (i-rim.it)</a><br/><a href="#">CURRICULA AND THEMES – Drim – Irim (i-rim.it)</a></li> <li>- for other enquiries contact the Doctorate Secretary:<br/><a href="mailto:phd_drim@unige.it">phd_drim@unige.it</a></li> </ul> <p>A step-by-step guideline for the application is available here:<br/> <a href="https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf">https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf</a></p>  |

## Curriculum: ROBOTICS AND INTELLIGENT MACHINES

Dottorato di "interesse nazionale" in agreement with Università di PISA, Università degli Studi della BASILICATA, Università degli Studi di FERRARA, Università degli Studi di SIENA, Università degli Studi di TRENTO, Università "Campus Bio-Medico" di ROMA, Politecnico di BARI, Università degli Studi di MILANO-BICOCCA, Università della CALABRIA, Università degli Studi di FIRENZE, Università del SALENTO, Università degli Studi di UDINE, Università degli Studi di PADOVA, Libera Università di BOLZANO, Università degli Studi di CATANIA, Università degli Studi di ROMA "La Sapienza", Università degli Studi della Campania "Luigi Vanvitelli", Università degli Studi di PALERMO, Politecnico di TORINO, Università Politecnica delle MARCHE, Università degli Studi di MODENA e REGGIO EMILIA, Università degli Studi di BOLOGNA, Istituto Italiano di Tecnologia (IIT) and Consiglio Nazionale delle Ricerche (CNR)

## Curriculum: MOBILITY AND AUTONOMOUS VEHICLES (CODICE 9352)

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| <b>Coordinator:</b> Cannata Giorgio  |   |
| Department of IT, Bioengineering, Robotics and Systems Engineering (Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi – DIBRIS)  |   |
| <b>Places:</b> 3 – <b>Grants:</b> 3 (*)  |   |
| (*) 1 doctorate grants fully funded by the associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.<br>(*) 1 grant funded within D.M. 351/2022, under condition to the approval of Ministerial funding; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00.<br>(*) 1 industrial doctorate grants fully funded by companies on behalf and associated parties; the annual gross amount of the grant, including social security expenses to be paid by the recipient, is € 16.500,00 |   |
| <b>Comparative assessment procedure</b>  | <b><u>QUALIFICATIONS/PUBLICATIONS AND INTERVIEW</u></b><br><br><b><u>july 25th at 9:30</u></b><br><br>Candidates are ranked separately for each research theme they applied.<br><br><b>Step 1 – Assessment of qualifications</b> (maximum 60 points).<br>Candidates are ranked on the basis (not in order or relevance) of their student career, Curriculum Vitae, motivation letter, qualified scientific and technical skills, endorsement letters.<br><br>Candidates are admitted to Step 2 if their score is greater than or equal to 40 points.<br><br><b>Step 2 – Oral examination</b> (maximum 60 points).<br>The Candidates are expected to discuss about their qualifications and scientific and technical skills, and to show their motivation and attitude for scientific research. Then they are interviewed on the research theme(s) they have applied for (see below) receiving a specific score for each interview.<br><br>The oral examination for each research theme is passed if the score is greater than or equal to 40 points.<br><br>The final score is the sum of the scores in Step 1 and Step 2 (for each research theme the candidate applied to). |
| <b>Further information on how to present qualifications/publications</b>   | Candidates <b>must</b> : <ul style="list-style-type: none"><li>– submit the <b>complete list of all the exams sat during their Bachelor's and Master's degree</b> and/or equivalents (BS, Master) specifying the average marks (GPA or equivalent indicator);</li><li>– specify <b>up to three research themes</b> of their interest (see the research themes listed below and at <a href="http://Admission-Drim-Irim(i-rim.it)">Admission – Drim – Irim (i-rim.it)</a>);</li><li>– submit a <b>motivation letter</b> (Research project) related to one (or more) of the research themes selected; use the template available at: <a href="http://Admission-Drim-Irim(i-rim.it)">Admission – Drim – Irim (i-rim.it)</a> ;</li><li>– submit a <b>Curriculum Vitae</b> including all the technical scientific studies/activities already done and pertinent to the doctoral program;</li><li>– submit <b>up to 3 recommendation letters</b> from university professors or recognized experts in the field supporting the candidate;</li></ul>   |
| <b>Research Themes</b>   | 1. Innovative solutions for electric vehicles and connected, cooperative and automated mobility – Politecnico Bari  |

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|                                  | <p>2. Perception and control in mobile intelligent robots – Univ Milano-Bicocca</p> <p>3. Control and Coordination of Mobile Etherogeneous Robots for Surveillance Operations – LEONARDO-Univ. Genova</p> <p>For a complete description of the research themes proposed check:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></p>   |
| <b>Information on references</b> | <p>Candidates must choose no more than three recommenders to endorse their candidature. The recommenders must be university professors or recognized experts in the field, and must upload the recommendation letters (specifying their name, role and affiliation), within the deadline of the public notice, to: <a href="https://forms.gle/TT4UwLqrjf88Cban6">https://forms.gle/TT4UwLqrjf88Cban6</a></p>   |
| <b>Foreign Languages</b>         | <p>English</p>   |
| <b>Further Information</b>       | <p>For more information about</p> <ul style="list-style-type: none"> <li>- the research themes please check the contact person indicated in the project themes description file available at:<br/> <a href="#">Admission – Drim – Irim (i-rim.it)</a></li> <li>- the doctorate rules and structure please check:<br/> <a href="#">RULES – Drim – Irim (i-rim.it)</a><br/> <a href="#">CURRICULA AND THEMES – Drim – Irim (i-rim.it)</a></li> <li>- for other enquiries contact the Doctorate Secretary:<br/> <a href="mailto:phd_drim@unige.it">phd_drim@unige.it</a></li> </ul> <p>A step-by-step guideline for the application is available here:<br/> <a href="https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf">https://unige.it/sites/contenuti.unige.it/files/documents/Guida_eng_XXXVII.pdf</a></p> |