**INSTITUTE
OF COMMUNICATION,
INFORMATION
AND PERCEPTION
TECHNOLOGIES**

Scuola Superiore
Sant'Anna

INTERNATIONAL Ph.D. PROGRAMME in EMERGING DIGITAL TECHNOLOGIES

Art. 1
(Description of the Programme and Available Positions)

1. Scuola Superiore Sant'Anna of Pisa, hereafter referred to as the "Scuola", pending the definition of the procedure for the enlistment foreseen by art. 3 – Decreto Ministeriale n. 45/2013, opens a public call for the following positions, to attend the three-year International Ph.D. Programme in Emerging Digital Technologies (EDT), starting from the Academic Year 2014-2015 at the Institute of Communication, Information, and Perception Technologies (TeCIP Institute):

    - 10 positions supported by a scholarship. One of these positions is offered in the framework of the European Project "PELARS - Practice-based Experiential Learning" and it is reserved to applicants submitting a research project on the topic "Computer Vision for Recognition of Human Motions and Actions in a Learning System" (curriculum "Perceptual Robotics");

    - 1 position supported by a scholarship funded by Telecom Italian, reserved to applicants submitting a research project on the topic "Devolopment of Sensing Tasks on the Cloud for the Diet Companion" (curriculum "Photonic Technologies);

    - 9 positions reserved to possible Ph.D. apprenticeship contracts ("Dottorato di Ricerca in Alto Apprendistato"), according to art. 11. of D.M. MIUR No. 45/2013 and art. 5 of D. Lgs 167/2011;

    - 3 positions reserved to eligible candidates employed in companies carrying out R&D activities, according to art. 11. of D.M. MIUR 45/2013 ("Dottorato Industriale" - subject to the existence of an agreement with the interested company).

2. Should additional funds become available before the beginning of the Programme, additional positions related to one or more curricula may be assigned by the Scuola to the eligible candidates.

3. The Scuola reserves the possibility to admit up to 3 further eligible candidates without scholarship.

4. The Ph.D. Programme in Emerging Digital Technologies is a three-year full-time programme, wich provides compulsory attendance, with highly interdisciplinary connotation, including structured courses and supervised research leading to the drafting of an original dissertation to be discussed in a public examination. Students can specialise in one of the following curricula:
    - **Embedded Systems**, with emphasis on real-time systems and resource management;
    - **Photonic Technologies**, especially referring to photonic integrated circuits, sensors, communications and networks;
    - **Perceptual Robotics**, with emphasis on telerobotics, cognitive robotics and virtual environments.
Each curriculum may specify scholarship dedicated to specific industrial research. Teaching and working language is English. At the successful completion of the Programme, the Scuola awards the student the "Ph.D." (Philosophiæ Doctor) Degree.
For further information on this Programme and its activities, applicants may visit the web site http://www.sssup.it/phdtecip.

5. The positions offered by the Scuola, for the International Ph.D. Programme in Emerging Digital Technologies (EDT) are divided among curricula, as follows:

Position / curriculum	Photonic Technologies	Embedded Systems	Perceptual Robotics
With scholarship	4	3	4
Without scholarship	1	1	1
Employed (Dottorato Industriale)	1	1	1
Ph.D. apprenticeship Contract (Dottorato in Alto Apprendistato)	3	3	3

Art. 2
(Participation Requirements)

1. Applicants must hold a Master of Science (M.Sc.) Degree or equivalent title without any restriction on the nationality of origin. For degrees obtained outside of Italy, candidates are asked to declare that the degree is equivalent to a degree awarded by Italian Universities, providing proof of said an equivalence. If the applicant does not provide a "Dichiarazione di Valore" (Declaration of Value), issued by the Italian diplomatic representative in the country to which the educational system of the university issuing the diploma belongs, the Selection Committee decides upon Degree equivalence only for the competition purposes

2. Non-EU applicants should have already obtained a Master of Science (M.Sc.) Degree by the closing date of this call, and must attach the relevant diploma or temporary certification in the application.

3. Current undergraduate students with EU citizenship, or non-EU undergraduate students attending a Master Degree Programme in EU, who will obtain a M.Sc. degree before October 31st, 2014, may also apply. In this case, a successful application will be conditional to the subsequent completion of the degree and the transmission to the Scuola of adequate documentation, no later than November 3rd, 2014.

4. Applicants should not be older than 35 years on July 7th, 2014. Older applicants may be exceptionally admitted by the Selection Committee considering their Curriculum Vitae et Studiorum. Candidates who will be employed under a Ph.D. apprenticeship contract must not be older than 29 years.

5. Candidates are required to have specific competences, precisely defined for each curriculum, and certified by corresponding exams. Students without some of the competences required may still be admitted to the Ph.D. Programme, but with additional "debts" assigned by the Selection Committee, which must be recovered before the end of the first year, in addition to the mandatory credits. The list of competences required for each curriculum is enclosed in Attachment "A".

Art. 3
(Applications)

1. Candidates are requested to apply online at http://www.sssup.it/phdapplicationonline by July 7th, 2014 at 11:59 pm (UTC -11). In case of difficulties with the online application, please contact the Ph.D. Office (telephone +39.050.882.189, E-mail phdtecip@sssup.it).

2. Once they have completed the online application, and no later than July 7th, 2014, applicants must print a copy of the application form, sign it, scan it and send it by e-mail to the Scuola Superiore Sant'Anna Ph.D. Office – phdtecip@sssup.it. Alternatively they can send the copy by fax at the following number: +39 050 882.095. The e-mail or the fax cover should be titled "PhD Application in Emerging Digital Technologies".

3. The application must include:

a) family name, first name, place and date of birth, , nationality;
b) declaration that the candidate holds an academic degree, as per Article 2 above. The application should also specify the degree title, its duration and the name of the University or University Institute which awarded the degree;
c) the Academic Year in which the candidate has started his/her Master Degree studies;
d) the date of graduation and the marks achieved, when applicable;
e) the Cumulative Grade Point Average (Exams Average Score / Max Score);
f) the curriculum selected of the three available (Photonic Technologies, Embedded Systems, Perceptual Robotics), and a possible statement of interest in industrial research;
g) the permanent address and postal address (if different) where applicants wish to receive communications and documents concerning the application. Applicants shall immediately contact the Scuola if these addresses change;
h) a valid E-mail address to receive all communications related to the selection purposes, as well as telephone number and a Skype id to allow for immediate contact.

4. Applicants with disabilities are requested to specify the type of aid required to take the examination in order to set up suitable arrangements. They should also specify if they need any additional time.

5. Applicants, as per Art. 2 paragraph 3 above, should specify, in the application, the date in which they will be awarded the degree.

6. The Scuola will not accept incomplete applications: the documents required must be received within the terms and according to the procedure set out in this call.

7. The Scuola's Administration does not assume any responsibility either for missed or late communications resulting from wrong address details provided by the applicant or due to a late communication of change of address as specified in the application, nor for any mailing delivery problem that cannot be ascribed to the fault of the Administration of the Scuola.

Art. 4
(Application Attachments)

1. Applicants shall mandatory submit in their online applications (all materials shall be in the pdf format and must use the file name shown):
a) Passport_Surname_Name.pdf: the copy of a valid identity document; non-EU applicants should provide compulsorily a copy of the passport;
b) Cv_Surname_Name.pdf: Curriculum Vitae et Studiorum (in English or Italian), covering scientific training, professional experience, publications and any information that might help in the evaluation of the candidate;
c) Transcripts_Surname_Name.pdf: the detailed list (in English or Italian) of academic courses taken, provided by attaching the university transcripts. This list should contain information regarding credits, units (or equivalent) received, the grades received for each course taken, and the date when the final examination was taken;
d) Thesis_Surname_Name.pdf: the thesis abstract (in English or Italian) and any other publication deemed suitable;
e) Certificate_Surname_Name.pdf: the Master diploma (if applicable);
f) Research Project_Surname_Name: a detailed Research Project (in English), of no more than 3,000 words, which will describe the research activities that applicants would like to perform during the Ph.D. Programme. The Research Project must include:
  -a title;
  -the scientific background and the relevant bibliography;
  -the aim of the research and the expected results;
  -the experimental methods and data analysis methods which will be used, where required;
g) References_Surname_Name.pdf (not mandatory but strongly suggested): up to two Reference Letters (in English or Italian) written by faculty members who have supervised the applicant's work during his/her university studies. As an alternative, referees can send their letters by the deadline provided for the call (July 7th, 11:59 pm, UTC -11) to phdtecip@sssup.it, stating in the e-mail subject "Candidate's surname and name – reference letter". It is the responsibility of the applicant to ensure the timely arrival of the reference letters, if delivered via E-mail by the referees.

h) Other__Surname_Name.pdf: any other useful documentation for the assessment (e.g. GRE certificates, training certificates, etc.).

2. Applicants, as per Art. 2 paragraph 3, shall specify in their application the subject of their M.Sc. degree thesis and shall submit to the Scuola an abstract by July 7th, 2014 among the submitted documents.

3. Candidates are responsible for the information that will be submitted into the online form and the validity of the certification/self-certification submitted. The University is entitled to check the information and validity of the documents submitted and in the event of a discrepancy with what has been declared it may exclude the candidate at any time including after the competition has taken place.

Art. 5
(Selection of applicants)

1. Selection of applicants will be based upon the assessment of all the submitted documents and publications (first phase) and an interview (second phase). The Selection Committee is appointed by the Rector of the Scuola.

2. Selection will be held according to the following schedule:
   - Titles assessment – by July 14th, 2014
   - Interviews – from July 21st to July 25th, 2014

3. In the first phase, the Selection Committee, will evaluate the submitted documents, i.e. the CV, the academic achievements, possible publications, the Research Project (both in terms of quality and relevance with the Ph.D. Programme), the possible reference letters, etc. and will assign a score out of 70. Only applicants who achieve a cumulative score of at least 49/70 will be admitted to the interview.

4. The Scuola will publish at www.sssup.it/phdtecip the list of applicants admitted to the interview, along with the interview schedule. The interviews will be held at the Scuola premises in the town of Pisa.

5. In case of difficulties in attending the interview, the Selection Committee may accept to hold the interview through web-conferencing tools (such as skype). In such a case, the candidate has to select this option in the application form, and the copy of the identification document sent as for Art. 4 must include a clear picture of the candidate for purposes of proper identification. For the candidates admitted to interview, the Scuola will use its resources to allow videoconferencing. Candidates must be available for all interview days until their respective interviews have been completed. In case of Internet or resource failures, the Selection Committee may decide to postpone the interview to another moment within the Interview period. Any software, Internet problem or communication difficulty cannot be ascribed to Scuola responsibility.

6. The interview will assign a score out of 30 points. During the interview the Selection Committee will cover technical issues related to the CV of the applicant, as well as the proposed Research Project, and the level of knowledge of the English language. Applicants should obtain at least 21/30 points in order to be included in the final rankings.

7. A final minimum score of 70/100 is therefore necessary to be classified as eligible in the final ranking list.

8. The ranking list, divided per curriculum, will be published on the Web Site www.sssup.it/phdtecip no later than July 31st, 2014, along with the assignment of the scholarships.

9. The admitted candidates will be informed via E-mail regarding the results of the competition and will be asked to confirm acceptance of the scholarship to phdtecip@sssup.it within 7 days. In case of lack of response by that date, the scholarship will be allocated to the next eligible candidate in the ranking list.

10. In case of vacant positions in one curriculum, scholarships may be assigned to other curricula according to the general ranking list.

Art. 6
(Beginning of the Ph.D. Programme)

1. The Ph.D. Programme, after the successful completion of the accreditation procedure as per art. 1 of the call, will start on November 3rd, 2014. Admitted applicants must enrol within November 7th, 2014.

2. Non-EU admitted applicants encountering difficulties linked to the issue of the visa for study purposes can ask the Ph.D. Secretary's Office to postpone the enrolment deadline. In any case, non-EU students must join the Ph.D. Programme and enrol no later than December 15th, 2014.

3. All admitted applicants are required to pay the regional tax for the Right to Education, a yearly amount of €140,00 unless eligible for exemption. For more information on the regional tax candidates can visit www.dsu.toscana.it.

4. Admitted applicants holding a non-Italian Master's diploma shall submit to the Ph.D. Secretary's Office, at the time of enrolment, the "Dichiarazione di Valore" (Declaration of Value), issued by the Italian diplomatic representative in the country where the diploma has been issued.

5. Should a successful candidate renounce or fail to accept his/her award, the Scuola will have the possibility to assign the vacant position to the next suitable candidate according to the ranking order as stated in Art. 5.

6. The Scuola reserves the right to verify the data submitted and to ask the competent authority of the Country where the awardee resides, a judicial record certificate.

Art. 7
(Ph.D. Students' Obligations and Rights)

1. Ph.D. Students commit themselves to comply with the rules of the Statute and the Regulations of the Scuola.

2. The research and education activities of Ph.D. Students are disciplined in the "Regolamento delle attività formative", available at http://www.sssup.it/regolamenti_allievi and in any eventual Partners agreements.

3. The Advisory Board of the Course will appoint a Tutor for each Ph.D. Student. The task of the Tutor will be to verify student's attendance to the training, cultural and scientific activities of the Scuola, and to support and verify the progress of his/her research.

4. At the end of each year of the Programme, the study and research activities of each Ph.D. Student will be reviewed by the Advisory Board, whose positive assessment constitutes a precondition for the admission to the next year.

5. At the end of the three year Programme, Ph.D. Students will undergo a final examination in order to obtain the Ph.D. Degree. During the Ph.D. Degree examination students will defend a written dissertation in front of a Board of Experts appointed by the Rector.

6. Ph.D. Students are required to participate in the didactic activities organised by the Scuola according to the programme rules.

Art. 8
(Ph.D. Student Allowances and Benefits)

1. The School provides Ph.D. Students with free lunch at the School's canteen form Monday to Saturday, according to the schedule of service, and allows them to use the library and laboratories, according to the rules specified in its Regulations.

2. Ph.D. Students who have been awarded a grant will receive a yearly gross amount of € 16,000.00 (gross amount including the Italian "gestione separata INPS" contribution), paid in monthly instalments. The scholarship is confirmed on a yearly basis, provided that the Ph.D. Student has completed the program of activities during the year and that the Advisory Board of the course admits them to the successive year of the programme. The School provides funds for periods abroad not exceeding six months, to be determined case by case according to the budget available.

3. Allowances, as per this Article, are subject, for fiscal purposes, to the laws in force in matters of fellowships allocated by Universities and Regions.

4. Ph.D. Student without a scholarship will take part in the Programme at their own expenses, but they will not have to pay any tuition fee.

5. Starting from the second year, the Scuola will ensure to each Ph.D. Student a yearly budget, to cover expenses related to the research activities, according to art. 9 of D.M. MIUR No. 45/2013.

6. The Ph.D. Programme Advisory Board may allow Ph.D. Students to participate to study and research activities outside the Scuola's premises.

7. The Scuola provides three-year course Ph.D. Students with an accident and civil liability full insurance coverage. The Scuola is entirely liable for safety and security measure implementation, also including Ph.D. course equipments and workplace.

Art.9
(Person in Charge of the Procedure, Data and Measures of Prevention of Corruption)

1. The person in charge of the competition procedure, as per this Announcement, is Dr. Silvia Marcacci, Responsible of the U.O. Ph.D-Lauree Magistrali of the Scuola Superiore Sant'Anna – Palazzo Toscanelli, Via Santa Cecilia, n.3 – 56127 Pisa – tel. +39 050.883.528, fax +39 050.883.586, E-mail: infophd@sssup.it.

2. The personal data supplied by the applicants will be mainly processed automatically by the Scuola Superiore Sant'Anna and in accordance with Art. 11 of the Legislative Decree No. 196/2003 ("Code Concerning the Protection of Personal Data") for the management of the competition procedure. The data may also be used in anonymous form for statistical purposes. Anyone interested can, at any time, exercise the rights provided by Art. 7 of the above-mentioned Legislative Decree, by writing to the Scuola Superiore Sant'Anna, U.O. PhD-Lauree Magistrali, Via Santa Cecilia, 3, 56127 Pisa (Italy).

3. The Scuola operates in compliance with Law No. 190/2012 concerning the prevention of corruption by implementing measures identified in the "Three-year anti-corruption plan" published in the section "Transparency in Administration" of the Scuola website at: http://www.sssup.it/amministrazione-trasparente/altri-contenuti/corruzione.

ATTACHMENT A

COMPETENCES REQUIRED FOR ENTERING THE Ph.D. PROGRAMME
IN EMERGING DIGITAL TECHNOLOGIES

Competences required for entering the curriculum in Embedded Systems:

Basic Calculus
Fundamentals of Physics
Fundamentals of Computer Programming
Computer Architectures
Fundamentals of Digital Circuits
Automatic Control
Operating Systems

Competences required for entering the curriculum in Photonic Technologies:

Profile A – Communication systems and devices	Profile B – Photonic Networks and control
Advanced Calculus	Advanced Calculus
Fundamentals of Physics	Fundamentals of Physics
Digital Communication Theory	Digital Communication Theory
Fundamentals of Optical Communications	Fundamentals of Optical Communications
Fundamentals of Optoelectronics	Computer Networks
Electromagnetic Fields and Propagation	Fundamentals of Computer Science
Fundamentals of Computer Programming	Fundamentals of Computer Programming

Competences required for entering the curriculum in Perceptual Robotics:

Profile A – Virtual Environments	Profile B – Automation
Elements of Algebra and Analysis	Elements of Algebra and Analysis
Elements of Physics	Elements of Physics
Geometry	Signal Theory
Elements of Computer Programming	Theory of Dynamic Systems
Computer Architectures	Automation and Control
Operating Systems	Robotics
Profile C – Mechanics	Profile D – Perception
Elements of Algebra and Analysis	Elements of Algebra and Analysis
Elements of Physics	Fundamentals of Physics
Fundamentals of Appied Mechanics	Fundamentals of Computer Science
Fundamentals of Machine Design	Fundamentals of Computer Programming
Dynamics & Control	Dynamics & Control
Robotics	Robotics

Profile E - Mechatronics
Elements of Algebra and Analysis
Elements of Physics
Mechatronics
Fundamentals of Electronics
Measurement and Data Analysis
Elements of Artificial Intelligence