



# PHILHUMANS

## Personal Health Interfaces Leveraging Human-Machine Natural interactions

An interdisciplinary training program for young researchers

<https://www.philhumans.eu/>

### European Industrial Doctorate Fellowship

### Call for Application

DEADLINE: 1 of March 2019 – 17:00 CET

ESR1 - COMPUTATIONAL INTELLIGENCE FOR BEHAVIOR UNDERSTANDING

ESR2 - A CONVERSATIONAL AGENT AS A DIGITAL COUNSELLOR FOR AUTOMATED THERAPY

ESR3 - DEEP PROGRAM INDUCTION FOR PERSONAL HEALTH SERVICES

**ESR4 - NLP, SEMANTICS AND SENTIMENT ANALYSIS FROM TEXT**

ESR5 - SCENE UNDERSTANDING AND INTERACTIONS PARTICIPATION FROM FIRST PERSON VISION

ESR6 - FACE ANALYSIS AND BODY LANGUAGE UNDERSTANDING FROM ECOCENTRIC CAMERAS

ESR7 - NATURAL LANGUAGE GENERATION FOR PERSONALIZED HEALTH COMMUNICATION

**ESR8 - BUSINESS ECONOMICS AND ROBOTICS**

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## **BACKGROUND OF THE PHILHUMANS RESEARCH PROJECT**

Eight industrial doctorate research fellowships are offered within the framework of **PHILHUMANS: Personal Health Interfaces Leveraging Human-machine Natural interactions**, a project funded by the European Union's Horizon 2020 research & innovation programme under the Marie Skłodowska-Curie – ITN, Industrial Doctorate (GA n. 812882).

PHILHUMANS is an international, inter-sectoral, interdisciplinary project providing Marie Skłodowska-Curie PhD Fellowships to 8 Early Stage Researchers (ESRs), with the potential to become the leaders of tomorrow innovative Artificial Intelligence (AI) and establish user interaction with their personal health devices.

More specifically, the PHILHUMANS research program will investigate novel AI methods for human-machine interaction in the personal health domain through a well-designed and well-structured research training programme. It will require the creation of a blend of interdisciplinary understanding of personal digital assistant, cognitive computing, (deep) ML, (multilingual) NLP, advanced Computer Vision, Big Data, within the inter-sectoral academic, medical and industrial environment of the beneficiaries and partners.

The PhD students (also indicated as Early Stage Researchers- ESR) will collaborate within the PHILHUMANS ITN research program.

## **TRAINING AND MOBILITY**

The project will offer an ambitious and innovative doctoral program for eight new PhD students, combining academic excellence with strong international business attitude, inspired to a innovation-oriented mind-set.

The PhD students will develop a completely new profile, based on a strong interdisciplinary attitude, integrating technical skills, socio-economic sciences' perspectives, creativity and entrepreneurial allure.

*Mobility* plays a central role in the programme: the PhD students will follow a secondment scheme training them in academic institutions as well as companies, moving from analytics, business, security and privacy as well as between academic research and company based development projects (all PhD students are required to spend a significant part their time at non-academic institution, mainly at Philips' premises). Mobility periods are foreseen both in European countries. The secondments and trainings will be planned based on the individual requirements of each ESR.

The rotation of PhD students among the partners will bring PhD students to learn complementary techniques and methods, which will broaden their perspectives and capabilities, and enhance their career development.

## **POST DESCRIPTION**

**Number of available positions:** 8 positions (ESR1, ESR2, ESR3, ESR4, ESR5, ESR6, ESR7, ESR8) as listed at the PhilHumans website (<https://www.philhumans.eu/>)

**Title:** Marie-Sklodowska-Curie Doctoral Fellow

### Hiring institutions and PhD Enrollment

- ESR1 and ESR2 will be hired by Philips Electronics Nederland B.V. - the Netherlands;
- ESR3 will be hired by TU/e - the Netherlands;
- ESR4 will be hired by University of Cagliari - Italy
- ESR5 and ESR6 will be hired by the University of Catania - Italy
- ESR7 will be hired by University of Aberdeen - United Kingdom
- ESR8 will be hired by R2M solution - Spain

**PhD Enrollment:** ESR1 and ESR7 will be enrolled at the Doctoral School of the University of Aberdeen, while ESR2, ESR4 and ESR8 will be enrolled at the Doctoral School of the University of Cagliari. ESR5 and ESR6 will be enrolled at the Doctoral School of the University of Catania.

### DESCRIPTION OF HIRING INSTITUTIONS

**Philips Research** is the source of many advanced developments in Healthcare, Lifestyle and Technology. Royal Philips is a diversified health and well-being company, focused on improving people's lives through meaningful innovation in the areas of Healthcare and Consumer Lifestyle. The company is a leader in cardiac care, acute care and home healthcare. Philips posted 2015 sales of EUR 24.2 billion and employs approximately 113,000 employees with sales and services in more than 100 countries. Philips Research Laboratories in Eindhoven, which are part of the Philips Group Innovation, employs approximately 1000 researchers. Within Philips Research Eindhoven work is carried in two programs aligned with Philips businesses: healthcare and consumer lifestyle. Data driven research and service orientation is common for both programs. Philips Research Eindhoven is involved in many research projects in this domain, both internal for Philips businesses as external. Philips Research is very active in partnering with universities and currently has more than 70 PhD students working in several flagship programs with different universities.

#### **Technische Universiteit Eindhoven**

Eindhoven University of Technology (TU/e) is a leading, research driven, and design oriented university of technology. The participating Department of Mathematics and Computer Science is a place that brings motivated students, lecturers and researchers together. It offers a varied study program that provides students with a wide range of options to choose from. It carries out world-class research in the fields of Data Science, Software & Systems, Computational Science and Fundamental Mathematics and Computer Science. TU/e is privileged to form part of Brainport, the world's smartest region, and it maintains good contacts with the regional business community and authorities. Thanks to these collaborative partnerships, TU/e offers exceptional future prospects to all who collaborate with.

#### **University of Cagliari**

The University of Cagliari (UNICA) is the biggest university of its region, Sardinia, and was founded in 1606. It consists of 11 faculties and 16 departments, which are organizational structures devoted to carrying out scientific research, teaching and other related activities that serve the surrounding area. In this project, the University of Cagliari participates with the Department of Mathematics and Computer Science (DMI). The DMI has 43 people in its teaching staff (8 full, 15 associate, 14 assistants, 6 temporary assistant professors). The Department includes several laboratories (robotics, semantic web (<http://swlab.unica.it/>), computer vision, big data) and equipment for research activities. The Department provides courses to 22 Degree Programs at the University of Cagliari (both bachelor and master). The Department has also an Administrative Secretariat consisting of an Administrative Officer and two collaborators.

### University of Catania

The Department of Mathematics and Computer Science (DMI) of the University of Catania (UNICT) has more than 75 researchers among Professors and Assistant Professors. The Department is promoting and coordinating researchers in the areas of Pure and Applied Mathematics, and Computer Science. It offers PhD programs both in Mathematics and Computer Science. The laboratory which will be involved in PhilHumans project is the Image Processing Laboratory (IPLAB – <http://iplab.dmi.unict.it>). IPLAB is part of the Department of Mathematics and Computer Science and leading the areas of Image Processing, Computer Vision, Machine Learning and Computer Graphics. The laboratory was established in 2005 and currently employs 21 researchers: 2 Full Professors, 1 Associate Professor, 1 Tenure Track Assistant Professor, 3 PostDoc, 14 Ph.D. Students. The research group has strong collaboration with industries leader in the field of expertise of the Image Processing Laboratory. The group has published more than 300 papers on topics related to the mentioned disciplines and 25 Patents. IPLAB has been involved in different international projects for the development of advanced algorithms with applications in different domains: embedded, mobile and wearable devices, first person (egocentric) vision (<http://iplab.dmi.unict.it/fpv/>), assistive and quality of life, forensics, medical, cultural heritage. It has established a number of international relationship with academic/industrial partners for research purposes. The IPLAB Research Group is one of the main organizers of the International Computer Vision Summer School (<http://www.dmi.unict.it/icvss>) and of the Medical Imaging Summer School (<http://www.dmi.unict.it/miss>).

### University of Aberdeen

The University of Aberdeen is a research intensive university which was founded in 1495. It is ranked 159 in the QS World University Rankings. Aberdeen’s Department of Computing Science focuses on applications of Artificial Intelligence, and has one of the world’s strongest research groups in Natural Language Generation (NLG). In addition to numerous research outputs, this group has worked with many companies, and has spun out Arria NLG, which today is one of the world’s leading NLG companies. One of the group’s current research priorities is to understand how NLG and AI technology can be used to encourage safer and healthier behavior, in areas such as driving, diet, exercise, and mental health.

### R2M solution

R2M Solution is an integrated and multi-disciplinary entrepreneurial innovation company that aggressively targets filling the gap between research activities and market implementation across the fields of Innovation, Engineering, Energy Services & Sustainability and ICT/Automation. R2M is a strategic innovator itself and as part of its business model helps organizations and projects plan and execute the strategic use research funding carried out over a comprehensive development strategy from idea to market. In doing so, R2M provides leadership, links high performance exploitation oriented networks, and leverages public and private funding instruments.

**Duration of the employment:** expected start date June/July 2019, duration 36 months.

### Income

Stage	Gross Salary (without family)	Gross Salary (with family)
ESR	€39,000 p.a.	€44,000 p.a.

*Note: figures for indication only. More detailed info is provided in the H2020 Marie Curie Guide for applicants. ([http://ec.europa.eu/research/participants/data/ref/h2020/other/guides\\_for\\_applicants/h2020-guide-appl-msca-if-2018-20\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-guide-appl-msca-if-2018-20_en.pdf))*

### Benefits

600€ Mobility Allowance per month (7200€ / year)

500€ Family Allowance per month (6000€ / year) - When applicable according to the Marie Skłodowska-Curie.

*Note: this is a gross EU contribution to the salary cost of the researcher. The net salary will result from deducting all compulsory (employer/employee) national social security contributions as well as direct taxes.*

## CAREER DEVELOPMENT PROSPECTS

The ESRs will gain highly valuable research skills, linked to disruptive and innovative technology for AI-assisted human-machines interfaces, employing language technology, cognitive computing, computer vision, and machine learning (ML). The fellows will be also provided with transversal skills (IPRs, grant application, etc.) and with the capacity to conduct their specific research according to an **interdisciplinary approach and to create innovation**. This combination of skills will increase their attractiveness for both academic and business sector. Moreover, exposure to the Chinese context and enhanced capacity to create business/research relationships will make all ESRs.

## NON-DISCRIMINATION

**Philips** has adopted family friendly policies as part of its equal opportunities policies for male and female employees. The ESRs will be located at the Philips premises at the High Tech Campus in Eindhoven, with the following facilities at hand:

- Dedicated breast feeding rooms in every building
- On-site day care facilities for young children
- An international school, within 5 kilometers of the High Tech Campus

## ELIGIBILITY CRITERIA

**Degree:** Master degree or equivalent providing access to PhD programs. See PhilHumans website for required degree for each position.

**Language:** English proficiency must be attested either through a previous English language diploma, or an internationally recognized proficiency test (at least C1 level of the Common European Framework of Reference for Languages i.e. IELTS, IBT, TOEFL or Cambridge).

**Career:** When starting their contract (June, July 2019), selected researchers should be within the first four years of their careers. This means being both within a four years window following their most recent graduation and not having been awarded a prior doctoral degree so far.

**Mobility:** At the time of recruitment, the researcher must not have resided, or carried out his/her activity in the country of the hiring institution for more than 12 months in the 3 years prior to recruitment date.

**Application:** Complete and timely submission exclusively via the PhilHumans online application system. Documents submitted must be in English. If supporting documents (e.g. letters of academic references and scan of degree qualification) are not in English, they must be submitted together with a certified translation in English).

*Please note that, in addition to the above mentioned eligibility criteria further essential or desirable requirements are detailed for each PhD position at the PhilHumans website.*

## HOW TO APPLY

The hiring process will be managed by the partner's own HR departments. Candidates can apply through the PHILHUMANS website (<https://www.philhumans.eu/>), via the Euraxess portal or via local partner recruitment channels. The selected candidates will be invited to apply for the position through the partner organization that is in charge for hiring the candidate. Applications must be sent exclusively in English.

Candidates will be requested to provide the following information:

1. a complete CV in Euro pass Format in English that must highlight activities and place where the activities have been carried out in order to give evidence of fulfilling the mobility eligibility criterion (see above). Use the template available at <https://europass.cedefop.europa.eu/editors/en/cv/compose>
2. a complete academic CV in English with references to past research and training experiences;

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3. a motivation letter, in English, highlighting the consistency between the candidate 's profile and the chosen ESR position for which they are applying;
4. at least 2 references (could be also a reference letter which should then be in English or in certified translation)
5. scan of the degree qualification, with certified translation in English (if the degree qualification is not in English).
6. scanned copy of valid identification document (identity card or passport)
7. Declaration of Honour according to the template available in the website.
8. (optional) any further and relevant supporting documents (e.g. research publications).

Candidates possessing the relevant requirements, may opt for applying for one or more positions. If candidates apply for more than one position they are required to submit one application for each position.

### INTENDED TIMING OF SELECTION PHASE

Timing	Recruitment activities
	Closing date posting candidates – applications through PhilHumans online application system or Euraxess portal
	Shortlisted candidates will be invited to submit to interview rounds 1 and 2 (videoconference and possible face to face)
	Interview planning and execution of interview rounds with their supervisory team
	Offers to selected candidates are provided
	Selected candidates confirmed in writing their acceptance of the position. Onboarding/relocation can start. In case candidates reject the offer they will lose the position, next candidates in the ranking list will be made an offer.
	Selected candidates will be recruited by hiring institutions.
	Employment contract will start after all formalities (VISA, realocation, etc.) are arranged.

### SELECTION CRITERIA

All eligible applications will be assessed by a Selection panel according to the following criteria **I. Qualifications and previous experience:**

Selection criteria for the admission to the shortlist	Score
<b>I. Qualifications and previous experience:</b>	<b>0-50,0</b>
A. Master degree in the scientific field relevant to the project	
B. Other qualifications relevant to project/area, incl. letter of references	
C. Authorship of research outputs	
D. Previous experience of research in specific project area	
<b>Total maximum score to be assigned</b>	<b>50,0</b>

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Candidates will be ranked for each foreseen position they have applied to. The threshold to be shortlisted is 35. If candidates have been awarded with the same score, priority will be based on scores for the sub criterion B “Other qualifications relevant to project/area, incl. letter of references”.

For each position, up to 5 candidates awarded with the highest scores in the ranking list will be invited for an interview with the intended supervisors. The interview may be conducted also using a videoconference system.

During the interview the candidates will be evaluated according to the following criterion II. Research abilities and personal skills.

<b>Selection criteria of shortlisted candidates</b>	<b>Score</b>
<b>II. Research abilities and Personal skills:</b>	<b>0-50,0</b>
1. Abilities to design, conduct and project manage original research in the subject area; 2. Ability in relevant research methods 3. Other relevant skills specific to project, including industry experience	
4. Excellent oral communication in English, including the ability to communicate complex subject orally 5. Good communication and interpersonal skills	
6. attitude of a natural team player and capability to work in an international research group 7. Enthusiasm, proactivity, creativity and commitment	
<b>Total maximum score to be assigned</b>	<b>50,0</b>

For each position the final ranking list will be obtained by adding the score obtained by the shortlisted candidate according to the criterion “Qualifications and previous experience” with the score obtained after the interview assessment according to the criterion II. Research abilities and personal skills. When scores are equal, priority will be based on scores for the sub criterion 3 “Other relevant skills specific to project, including industry experience”.

The selection panel (supervisors) will assess the profile of each candidate according to the above mentioned criteria; In case a candidate will not reach a minimum score of 35 points out of 50 points on the criterion “Research abilities and personal skills”, the selection panel has the right to not proceed with recruitment.

**CONTACT:** Enquiries can be sent to the relevant project supervisor(s) via email.