Ref. BODYinTRANSIT-PostDoc3:
Post-Doctoral Position in Machine Learning for Dynamic Body Blueprints

The Universidad Carlos III de Madrid (UC3M) offers a full-time post-doctoral position for the Consolidator Grant Horizon2020 project **BODYinTRANSIT: Sensory-driven body transformation experiences on-the-move**.

Overall description of the research group and project: The successful candidate will join a new, diverse, multi-disciplinary and international research group led by Prof. Ana Tajadura-Jiménez and which combines perspectives of Human-Computer Interaction (HCI), Cognitive Neuroscience and Artificial Intelligence. The main research focus is on multisensory body perception and body-centred technologies that can alter people's body perception, behaviour, emotion and social identity. The research group is part of the DEI Interactive Systems group at the UC3M Department of Informatics.

BODYinTRANSIT is a multidisciplinary project that combines neuroscience research on multisensory body perception; data modelling of the links between body perception, behaviour, emotion and social functioning; wearable-based embodied multisensory interaction design; and field studies in real-life and on-the-move contexts with physically inactive users, somatic practitioners and users with body image concerns, all with the aim to investigate **sensory-driven body transformation experiences on-the-move.** The project addresses scientific questions from these different perspectives, with both quantitative and qualitative methods, and with both, scientific and outreach goals.

BODYinTRANSIT team is formed by HCI/computer scientists, psychologists and cognitive neuroscientists, data scientists, engineers, acousticians, philosophers, ethics experts, designers, professional dancers and clinical practitioners. The international research network for BODYinTRANSIT includes, among others, collaborations with University College London, Birkbeck - University of London, IRCAM - Paris, LMU - Munich, Tilburg University, Ritsumeikan University - Japan, and the Estonian Academy of Arts.

You can read more about the BODYinTRANSIT project and our current research in the following links:
The BODYinTRANSIT Project: https://bodyintransit.eu/
The Magicoutfit Project: www.magicoutfit.com
The Magic Lining project (science-art project): https://vertigo.starts.eu/calls/2017/residencies/magic-lining/detail/

Job Description:
An important challenge in computer science, as well as one of the biggest challenges in human-computer interaction and ubiquitous computing projects, is how to design interfaces between computers and bodies. Learning how to infer body transformation experiences from movement data is not possible at the moment but has many applications in terms of enhancement and personalization of the underlying technology, as well as to advance basic research on body perception. Body movement sensor data can be seriously contaminated and also people wearing them may perform unexpected movements. A fundamentally different approach is needed to handle both the complexity of the user's behaviour as well as the uncertainty of the sensor data. The successful applicant will develop novel techniques to model the links between body perception data and user behavior, aiming to provide a continuous measure of body transformation experiences based on body sensor data.

Some specific responsibilities that this position involves include:
- Conduct literature reviews of the state-of-the art of the project research area.
- Design, conduct and analyze data of experimental studies, using a variety of ML/DL methods.
- Prepare reports on the state of the art, experimental methods and results.
- Report results at conferences and international peer-reviewed journal.

- Disseminate results in academic and non-academic venues, as well as to user groups and stakeholders.
- Archive research data, software and publications in repositories.
- Participation in the group meetings and project coordination tasks.
- Periodic reporting on the research progress and results to the PI.
- Helping more junior researchers with research tasks.
- Participation in the organization and coordination of workshops/events, as well as different outreach activities, such as school science exhibitions, public exhibitions, seminars and talks.

Qualifications:
- A PhD degree in machine learning or any related topic (Mathematics, Physics, Computer Science, Engineering, etc)
- Excellent programming skills.
- Excellent data science skills.
- Excellent verbal and written communication skills in English.
- Excellent organization skills.
- Able to work independently and as part of a collaborative research team.
- Decisive, imaginative, approachable and supportive.

Plus:
- Research experience as part of the team of a research project funded by a competitive call.
- A strong research background in (topics related to) sensor data modelling and fusion.
- International research network.
- Strong interpersonal skills to work effectively as part of a highly collaborative research team, and to perform studies with volunteers in research studies, as well as to build and maintain relationships with academics and collaborating institutions representing user groups.
- Pro-active personality, detail focused.

What we offer:
- Total duration of the contract: 36 months, through renewable 1-year contracts.
- Annual gross salary in the range of 31000- 40000€, commensurate with qualifications.
- Start date: February-April 2022 (flexible).
- The position includes ad hoc training in specific research skills and career development initiatives.
- Become part of a young, dynamic, highly qualified, collaborative team.
- Flexible working environment and schedule.
- Opportunity to travel to international venues to present research activities.
- Opportunity to carry out international research stays with top researchers in the field.
- Opportunity to supervise the activities of MSc and PhD students.
- Health coverage under the National Health System.

Information
Enquiries can be made to Dr. Ana Tajadura-Jiménez, email: atajadur@inf.uc3m.es. Please use the following subject in your email: "**BODYinTRANSIT_postdoc3_family name of the applicant**".

How to apply:
Candidates are invited to send their application (in English) by e-mail to atajadur@inf.uc3m.es with the following subject: "**BODYinTRANSIT_postdoc3_family name of the applicant**". The deadline for applications is **December 2021** (though early applications are strongly encouraged; later applications will be considered until the vacancy is filled).

The following documentation should be attached <u>in a single PDF file</u>:
1. CV (up to 5 pages). Include here any experience in Research, Industry, Science communication, Science management, and a full publication list
2. Highlights of the 3 main research papers.
3. A letter of interest (up to 1 page), explaining why you want to join BODYinTRANSIT and what are your expectations; highlight your strong points.
4. Up to 3 references (with contact details and email), that can provide you with a recommendation letter if further required in the process.

All candidates will have feedback with a message as proof of delivery. Top candidates will be invited to an individual online interview organized by UC3M. The final decision criteria will be based on merits (70%) and the interview (30%).

The Universidad Carlos III de Madrid hires on the basis of merit and is strongly committed to equity and diversity within its community. All qualified applicants are encouraged to apply, they will receive consideration for employment without regard to race, colour, religion, sex, sexual orientation, gender identity, national origin, disability status, protected veteran status, or any other characteristic protected by law. Note that if the successful applicant is neither a European citizen nor a permanent resident of Europe, he or she must be issued a work permit prior to commencing the position.

Brief description of the institution:
Universidad Carlos III de Madrid (UC3M) is a state public university established in 1989. Its main goal is to provide specialised training in Engineering, Law and Social Sciences, Humanities, Communication and Library Science, as well as becoming a leading European research centre.
The University has five centres: 2 Faculties, 1 Technical School, 1 School of Graduate Studies and 1 Doctoral School within 4 Campuses. UC3M is divided in 28 Academic Departments, 28 University Research Institutes and 133 Research Groups. The University has 22.600 students, being similar in size to some of the major European universities, such as Paris II, Uppsala, Maastricht, Tilburg, Cambridge and Oxford. One out of five UC3M students are international. There are over 1200 doctoral students and near 2000 Faculty at UC3M.
UC3M has striven to make research a fundamental pillar of its activity in order to promote its teaching activity, attract talent and create new research areas. The UC3M is among the top Spanish universities for their participation in European level R&D&I programmes.