



ERCIM "ALAIN BENSOUSSAN"
FELLOWSHIP PROGRAMME



Scientific Report

First name / Family name

Juan Carlos Torrado

Nationality

Spanish

Name of the *Host Organisation*

Norwegian University of Science and
Technology

First Name / family name
of the *Scientific Coordinator*

Letizia Jaccheri

Period of the fellowship

01/01/2019 to 31/12/2020

I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

The research carried out during the fellowship belonged to the field of assistive technologies for people with intellectual disabilities, inclusive software, and social innovation.

During the first year, the fellow participated as co-supervisor in four Master Theses related to software design for serious games for children, physical activity for people with intellectual disabilities and prevention of child marriage. The fellow continued the work of these students as to make publications in IDC'19 (Boise, Idaho), ICEC'19 (Arequipa, Perú) and ICSE'20 (online), and presented them in those venues. He also represented NTNU in the board meeting of IFIP TC14 in Arequipa, Perú on behalf of his supervisor, Prof. Letizia Jaccheri. The work about physical activity for people with intellectual disabilities was used to start a collaboration with the Health Informatics and Technology group led by Prof. Gunnar Hartvigsen in the Arctic University of Norway. The fellow also participated in the international partnership project IPIT, and travelled to the University

of Michigan, US, to present his work along with other participants from NTNU, Nanjing University and Michigan.

During the second year, the fellow participated actively in the submission of two EU project proposals: one as coordinators, one as partners. Although the projects were not funded, the fellow acquired valuable skills related to grant proposal, planning and budgeting that allowed him to start writing a proposal for the Norwegian Research Council Fund in the Call for Young Talents. In this year, the fellow also wrote and submitted two journal papers that were accepted in top journals (IEEE Access, IF =3.745; ENTCOMP, IF=1.341). He also visited the Arctic University of Norway in January to strengthen his collaboration with Prof. Gunnar Hartvigsen. Additionally, the fellow participated in a project called 'IDUN: from PhD to professor'. This project is based on a mentorship and several seminars and tasks that will help the fellow building his career after the ERCIM.

At the end of the second year, the fellow got a job as postdoctoral researcher (3 years) at Universitetet i Bergen, in the Senter for alders- og sykehjemsmedisin. There, he will work in the Active Ageing study, researching about wearable technology to improve the physical activity of elderly people.

Despite the COVID-19 outbreak, the fellow managed to make successful collaborations and to continue building his career by means of scientific publications in impactful journals and international conferences, as well as to submit project proposals and participate in the department.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

1. **Torrado, J. C.**, Wold, I., Jaccheri, L., Pelagatti, S., Chessa, S., Gomez, J., ... & Michalsen, H. (2020, October). Developing software for motivating individuals with intellectual disabilities to do outdoor physical activity. In *2020 IEEE/ACM 42nd International Conference on Software Engineering: Software Engineering in Society (ICSE-SEIS)* (pp. 81-84). IEEE.
2. Quayyum, F., Bueie, J., **Torrado, J. C.**, & Jaccheri, L. (2020, June). Understanding coding activities for teens: a focus on school teachers' perspectives. In *Proceedings of the 2020 ACM Interaction Design and Children Conference: Extended Abstracts* (pp. 187-192).
3. Sharma, K., **Torrado, J. C.**, Gómez, J., & Jaccheri, M. L. (2020, September). Improving Girls' Perception of Computer Science as a Viable Career Option through Game Playing and Design: Lessons from a Systematic Literature Review.
4. **Torrado, J.C.**; Gomez, J.; Montoro, G. (2020, June) Hands-on experiences with Assistive Technologies for People with Intellectual Disabilities: Opportunities and Challenges. IEEE ACCESS.

5. Evensen, I., Omfjord, J. B., **Torrado, J. C.**, Jaccheri, L., & Gomez, J. (2019, November). Designing Game-Inspired Applications to Increase Daily PA for People with ID. In *Joint International Conference on Entertainment Computing and Serious Games* (pp. 377-382). Springer, Cham.
6. de Espinosa, G. M., & **Torrado, J. C.** (2019, September). Alenta: A Practitioner's Case of Technology Usage to Support Special Needs of Populations with Cognitive Disabilities. In *Conference on e-Business, e-Services and e-Society* (pp. 17-22). Springer, Cham.
7. Brevik, J., Jaccheri, L., & **Torrado, J. C.** (2019, June). Designing Software to Prevent Child Marriage Globally. In *Proceedings of the 18th ACM International Conference on Interaction Design and Children* (pp. 452-457).
8. **Torrado, J. C.**, Gomez, J., & Montoro, G. (2019, June). Assisted Behavior Control with Wearable Devices: A Case Study for High-Functioning Autism. In *Multidisciplinary Digital Publishing Institute Proceedings* (Vol. 31, No. 1, p. 2).
9. Alamán, X., Carro, R. M., Cobos, R., Gómez, J., Jurado, F., Ruano, P. M., ... & **Torrado, J. C.** (2019, June). GHIA: Modelado de Estudiantes, Análítica de Aprendizaje, Atención a la Diversidad y e-Learning. *Informatica Educativa Comunicaciones*, 30(30).
10. **Torrado, J. C.**, Gomez, J., & Jaccheri, L. (2019, June). Supporting self-evaluation for children with mental disabilities through Augmented Reality. In *Proceedings of the 18th ACM International Conference on Interaction Design and Children* (pp. 635-641).

III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES

- 'IDUN: from PhD to Professor': mentee and global seminars.
- Interaction and Design for Children Conference 2019 (Boise, Idaho)
- International Conference of Entertainment Computing 2019 (Arequipa, Perú)
- International Conference of Software Engineering 2020 (online)
- International Conference on e-Business, e-Services and e-Society 2019 (Trondheim, Norway)
- International Conference on Ubiquitous Computing and Ambient Intelligence 2019 (Toledo, Spain)
- CatchIDI 2019: Talk about PhD research
- CatchIDI 2020: Talk about research of his 1st year of ERCIM
- IPIT (Michigan, USA): talk about his research in the partnership context

IV – RESEARCH EXCHANGE PROGRAMME (REP)

The fellow carried out his Research Exchange Programme in the Department of Computer Science in the University of Pisa with professors Susanna Pelagatti and Stefano Chessa during October 2019. There, they wrote a publication about the continuation of the work about exercise games to motivate physical activity for people with intellectual disabilities. After that, the fellow continued collaborating with them including them as partners in one of the EU project proposals, and, later, he wrote and sent a paper in collaboration with Prof. Susanna Pelagatti to the Entertainment Computing journal.