





## Personal Details

Born 01/01/1979 in Sedan, France  
Nationality: French  
Two children:  
MILLA (2010) and CAMILLE (2016)

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## Positions and Qualifications

### Positions

**2023 - present** : R&D Director, Naval Group Pacific<sup>1</sup> (Australia).  
**2018 - present** : Professor, ENIB<sup>2</sup> (France).  
**2021 - 2023** : CNRS delegation, IRL CROSSING (Australia).  
**2007 - 2018** : Associate professor, ENIB.  
**2006 - 2007** : Assistant associate professor, UBO<sup>3</sup>.  
**2005 - 2006** : Assistant associate professor, ENIB.  
**2002 - 2005** : PhD student, ENIB.

### Honorary Positions

**2021 - present** : Adjunct Professor, University of Adelaide (Australia).  
Visiting Professor, Flinders University (Australia).  
**2018 - 2020** : Visiting Professor, University of Miami (USA).

### Honors

**2021 - 2025** : National scientific excellence award - PEDR, rank A.  
**2015 - 2019** : National scientific excellence award - PEDR, rank A.  
**2011 - 2015** : National scientific excellence award - PES, rank A.

### Education

**2012** : Habilitation to supervise research (HDR), computer science<sup>4</sup>.  
**2005** : PhD Thesis, UBO, Computer science.  
**2002** : MSc, Computer science, Rennes I University.  
ENIB Engineer.

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<sup>1</sup> Naval Group Pacific (NGP) is a subsidiary represents Naval Group in Australia.  
NGP is a R&D Centre of Excellence for Naval Group.

<sup>2</sup> ENIB : École Nationale d'Ingénieurs de Brest (Brest National Engineering School, France)

<sup>3</sup> UBO : Université de Bretagne Occidentale (University of Western Brittany, France)

<sup>4</sup> Highest degree in French academic education, awarded after passing the tenure process, qualifies for full professorship

## Career overview

I received a PhD in **artificial intelligence** and **virtual reality** (2005). I obtained a lecturer position at ENIB (2006), as member of the Lab-STICC (UMR CNRS).

I defended my Habilitation (HDR) in 2012 and received the qualification as professor in section 27 (2013). I obtained a position of professor in 2018 at ENIB. During my career, I was awarded by the Prime d'Encadrement de Recherche (2011-2015), then the Prime d'Excellence Scientifique (2015-2019 and 2021-2025). I am supervising 6 PhD students (in progress); 13 defended PhD and 28 research masters were under my supervision.

Between 2017 and 2021, I was in charge of the program "Artificial Intelligence" at Lab-STICC (50 permanent researchers). Between 2020 and 2021, I lead the RAMBO team at Lab-STICC (10 permanent researchers) focusing my research on **interactive robotic**.

Regarding international recognition, I have been appointed as professor (by courtesy) at University of Miami from 2018-2020 and also as visiting professor from 2016-2017 at Florida International University. Currently, I am granted as adjunct professor at University of Adelaide and visiting professor at Flinders University.

In France, I have been involved in several academic projects (ANR, FIU, EU) and have been responsible for many industrial projects (including 7 CIFRE). In terms of influence, I have been **chief editor of the journal IJVR** ("International Journal of Virtual Reality") for 5 years (2013-2018). This journal has been ranked "C" by ERA CORE.

Concerning teaching, I have an average annual service of 250 hours, focused on computer science learning at ENIB and research program (master2). I had the opportunity to lead the master's program and have been in charge of the **M2 in computer science during 10 years**.

In addition to these activities, I was involved in the management of my institution by being elected to the board of directors and the pedagogical council. I have been the reviewer of six PhD and one HDR. In 2019, I had the chance to be nominated as French expert to produce a **report on the progress of AI in Russia**. This document was ordered by the French Government.

Between 2021 and 2023, I have been in **secondment at the Australian IRL "CROSSING"**, international CNRS laboratory gathering the three universities of Adelaide, Naval Group and CNRS. Cotutelle PhD is ongoing with Flinders university (Adelaide) and cotutelle PhD funded by EU just started with University of South Australia. In 2022, I received the trophy of "French of the year in Australia", a major event in my career.

As researcher, my priority was to transfer algorithms I have developed to concrete situations. As a result I have participated in competitions with good results (mainly IJCAI and RoboCup), **winning the RoboCup@Home 2022 and 2023 contests (i.e. world champion in social robotic)**.

Following this experience, I have the opportunity to **lead Naval Group's R&D activities in Australia**, via its subsidiary Naval Group Pacific (NGP). This involves running a comprehensive research program in conjunction with the local industrial and academic. In 2023, NGP launched 8 PhD in collaboration with 3 universities. My role is to coordinate the activity locally, while liaising with Naval Group in France. This is a 2 year secondment (2023-2025).

## Administrative Activities

### Administrative Responsibilities

#### Committees

- 2023 - present** : Management committee (IRL CROSSING), Naval Group representative
- 2021 - 2023** : Management committee (lab IRL CROSSING), CNRS representative
- 2017 - 2020** : Laboratory committee (Lab-STICC).
- 2016 - 2020** : MSc committee member at Brest  
(4 institutions : UBO/ENIB/IMT Atlantique/ENSTA).
- 2012 - 2018** : Board of directors ENIB.
- 2014 - 2016** : Board of directors AFIA <sup>5</sup>.
- 2013 - 2014** : Board of directors CERV.  
**2013** : Disciplinary committee ENIB.
- 2010 - 2013** : Educational board ENIB.

#### Jury

- 2017 - 2020** : MSc's jury, Brest.
- 2011 - 2017** : Student admission ENIB.
- 2012 - 2017** : MSc's jury, Brittany.

#### Others

- 2013** : Reviewer in charge of the disciplinary committee ENIB.
- 2008 - 2011** : In charge of relations between high-schools, universities and ENIB.

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<sup>5</sup> AFIA : French Association of Artificial Intelligence (<http://www.afia.asso.fr>)

## Teaching and Supervision

Since my recruitment at the ENIB, I have been in charge of 250 teaching hours per year.

### Teaching

#### ENIB

| Year        | Theme                   | Vol.          | Number                         | Kind        |
|-------------|-------------------------|---------------|--------------------------------|-------------|
| 2019 - 2021 | Javascript              | 6h/semester   | 24 (4 <sup>th</sup> year ENIB) | lecture/lab |
| 2019 - 2021 | C#                      | 6h/semester   | 24 (4 <sup>th</sup> year ENIB) | lecture/lab |
| 2018 - 2021 | Android                 | 18h/semester  | 24 (4 <sup>th</sup> year ENIB) | lecture/lab |
| 2015 - 2016 | Android                 | 4.5h/semester | 24 (4 <sup>th</sup> year ENIB) | lab         |
| 2013 - 2021 | SCRUM Project           | 15h/semester  | 4 students                     | lab         |
| 2008 - 2013 | Network                 | 12h/semester  | 24 (4 <sup>th</sup> year ENIB) | lab         |
| 2008 - 2021 | UML *                   | 42h/semester  | 80 (3 <sup>th</sup> year ENIB) | lecture/lab |
| 2008 - 2021 | C++                     | 42h/semester  | 24 (3 <sup>th</sup> year ENIB) | lab         |
| 2007 - 2021 | Object programming *    | 42h/semester  | 90 (2 <sup>th</sup> year ENIB) | lecture/lab |
| 2007 - 2021 | Artificial intelligence | 12h/semester  | 24 (5 <sup>th</sup> year ENIB) | lecture/lab |
| 2006 - 2008 | Virtual reality         | 4h            | 24 (5 <sup>th</sup> year ENIB) | lecture     |
| 2003 - 2006 | Soft Computing          | 30h           | 24 (5 <sup>th</sup> year ENIB) | lecture/lab |
| 2003 - 2006 | Logic Programming       | 36h           | 24 (5 <sup>th</sup> year ENIB) | lab         |
| 2003 - 2006 | Algorithm               | 260h          | 24 (1 year ENIB)               | lab         |
| 2003 - 2006 | Compilation             | 48h           | 24 (5 <sup>th</sup> year ENIB) | lab         |

#### In others institutions

| Year        | Theme                          | Vol. | Number                   | Kind        |
|-------------|--------------------------------|------|--------------------------|-------------|
| 2018 - 2021 | Introduction to Robotics       | 6h   | 12 (Australian students) | lecture/lab |
| 2017 - 2021 | Introduction to Robotics       | 6h   | 12 (MSc UBO)             | lecture/lab |
| 2017 - 2021 | Interactive Machine Learning * | 20h  | 24 (MSc UBO)             | lecture/lab |
| 2015        | Virtual reality                | 1h   | 21 (lifelong learning )  | lecture     |
| 2011 - 2021 | Artificial intelligence        | 6h   | 10 (MSc Britany)         | lecture     |
| 2008 - 2021 | Neurals Networks               | 6h   | 20 (MSc UBO)             | lecture/lab |
| 2005 - 2006 | Knowledge Engineering          | 26h  | 20 (MSc UBO)             | lecture/lab |
| 2005 - 2006 | Software Engineering*          | 130h | 20 (MSc UBO)             | lecture/lab |
| 2005 - 2006 | Formal Methods                 | 30h  | 20 (MSc UBO)             | lecture/lab |
| 2005 - 2006 | Virtual Reality                | 6h   | 20 (MSc UBO)             | lecture     |
| 2003 - 2004 | Multi-Agents system            | 32h  | 20 (MSc Ecole Navale)    | lecture/lab |

#### In others countries

| Year        | Theme                        | Vol. | Number                        | Kind        |
|-------------|------------------------------|------|-------------------------------|-------------|
| 2021 - 2022 | Immersion in virtual reality | 2h   | 6 (M2 of Psycho at Adelaide ) | lecture     |
| 2014        | Virtual reality              | 20h  | 21 (M2 AUL-Beyrouth)          | lecture/lab |

\* : Teaching Unit (TU) coordinator

## Responsibilities

**2011 - 2021** : In charge of MSc (M2) in computer science for ENIB (double degree).

- coordination with others institutions (common M2)
- accreditation application (every 4 years)
- definition of programs
- students selection
- jury
- internships management
- promotion of the double degree

**2014 - 2021** : In charge of the classroom " NAO Robots " (15 robots) at the ENIB school

## Supervision

**2007 - 2021** : Supervision of around 300 interns working in companies.

## International Mobility

**2014** : Invited teacher at "Arts, Sciences and Technology University" (AUL) <sup>6</sup>, Beirut, Lebanon. Course in Artificial Intelligence and Virtual Reality (1 week / 20h).

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<sup>6</sup> <http://www.aul.edu.lb/>

## Research Activities

**Key-words:** Artificial Intelligence, Interactive Simulation (Human-System), Machine Learning, Robotic, Cognitive Sciences, Human Factors.

### Scientific Positioning

How can entities/robots be equipped with autonomous behavior in complex environments in which humans participate?

Symbolic artificial intelligence techniques have been applied to define these behaviors. However, these techniques have limitations as they are mainly based on predetermined rules of behavior chosen by the designer. Despite this fact, in complex (open simulation, heterogeneous and participatory) worlds, entities may behave unpredictably (behavioral variability of autonomous entities, free will of human users), thus creating new situations. When faced with situations unforeseen by the programmer, entities may display unsuitable behaviors. Therefore, the methodologies derived from adaptive artificial systems may contribute to overcoming these limitations. My study focuses on the theme of adapting the behavior of autonomous entities in participatory environments. The aim of such adaptation is to make the behavior of entities as believable as possible (*i.e.* similar to human behavior). For this reason, we consider that entities should *learn* through experience; they must *anticipate* the behavior of others and the potential impact on the environment, and they must also use the *presence of the human user* in the world to their advantage to adapt their behavior. Imagine a world where, like humans, each entity would have its own behavior which would evolve automatically throughout the simulation. This is the aim of my research.

### Softwares

<https://github.com/ROBOBREIZH>

### Software patent

**2021** : "Infobuna" : software for disease detection and grading of coffee using photos  
(num IDDN.FR.001.170002.000.S.P.2021.000.2100)

### Publications synthesis

| <i>Inter. Journals</i> | <i>National Journals</i> | <i>Inter. Conf.</i> | <i>Preprints</i> | <i>National Conf.</i> | <b>Total</b> |
|------------------------|--------------------------|---------------------|------------------|-----------------------|--------------|
| 26                     | 4                        | 68                  | 4                | 5                     | <b>107</b>   |

**h-index** : 19 (google scholar<sup>7</sup>)

**citations**: 1425 (google scholar)

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<sup>7</sup> <https://scholar.google.com/citations?user=yNTv2kwAAAAJ>

## Main publications

Delamarre A., Shernoff E., **Buche C.**, Frazier S., Gabbard J. and Lisetti C. (2021). The Interactive Virtual Training for Teachers (IVT-T) to Practice Classroom Behavior Management. *International Journal of Human - Computer Studies*. 152. [Q1, Rank :A]

Cazorla R., Pionel L., Papadakis P. and **Buche C.** (2021). Bottleneck Identification to Semantic Segmentation of Industrial 3D Point Cloud Scene via Deep Learning. *International Joint Conference on Artificial Intelligence (IJCAI)*. pages 4877-4878 [Rank :A]

Delamarre, A., **Buche C.** and Lisetti C. (2021). Modeling Emotions for Training in Immersive Simulations (METIS): a Cross-Platform Virtual Classroom Study. *IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*. pages 78-83 [Rank :A]

Cazorla R., Pionel L., Papadakis P. and **Buche C.** (2022). Reducing domain shift in synthetic data augmentation for semantic segmentation of 3D point clouds. *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*. pages 1198-1205 [Rank :B]

Walleign S., Polceanu M., Jemal T. and **Buche C.** (2019). Coffee Grading with Convolutional Neural Networks using Small Datasets with High Variance. *International Conference on Computer Graphics, Visualization and Computer Vision (WSCG)*. pages 113-120. [Rank :B]

## Supervision

| PhD<br>(in progress) | PhD<br>(alumni) | <b>Total<br/>PhD</b> | Postdoc | Engineer | MSc       |
|----------------------|-----------------|----------------------|---------|----------|-----------|
| 6                    | 13              | 19                   | 2       | 3        | <b>26</b> |

## Responsibilities

### Scientific and Management Responsibilities

**2023 - present** : R&D Director (CTO) at Naval Group Pacific.

Naval Group Pacific is a subsidiary that represents Naval Group in Australia.

Leading Naval Group's R&D activities in Australia.

9 FTE : Admin, VIE, engineers, scientists ...

Budget : \$1,100.000 per year

**2019 - 2023** : Group "Robobreizh"<sup>8</sup> (~ 10 researchers), Lab-STICC/IRL/LITIS

**2019 - 2021** : Team "RAMBO" (~ 15 researchers), Lab-STICC.

**2017 - 2021** : Program "Artificial Intelligence" (~ 50 researchers), Lab-STICC.

**2017 - 2019** : Group "Interactive Machine Learning" (~ 15 researchers), Lab-STICC.

**2016 - 2017** : Group "Cognition and Simulation" (~ 10 researchers), Lab-STICC.

### Editorial Responsibilities

**2016 - 2017** : Co-Editor of a special issue "Computer Games" for "Revue d'Intelligence Artificielle"

**2013 - 2018** : Editor-in-Chief of the journal "International Journal of Virtual Reality" (IJVR)<sup>9</sup>

- ERA CORE indexed C

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<sup>8</sup> <https://www.enib.fr/~robobreizh/>

<sup>9</sup> <https://ijvr.eu/>

## Internationals Scientific Collaborations

### Ethiopia

- French Embassy in Ethiopia, doctoral program CAMPUS FRANCE / ENIB + UBS
  - ◊ 3 PhD candidates at ENIB via this program
  - ◊ 1 PhD candidate at UBS via this program

### Spain

- GENEURA: credibility of the characters in video games by observation of human behavior.
  - ◊ Joint publications (see appendix)
  - ◊ A. Mora was a PhD jury member at ENIB (J. Soler)

### USA

- COLORADO STATE UNIVERSITY : interactive machine learning
  - ◊ 4 M1 students from ENIB were interns at Colorado State
- AFFECTIVE SOCIAL COMPUTING LABORATORY (FIU) : virtual classroom to train teachers
  - ◊ Joint publications (see appendix)
  - ◊ Common research project ("Interactive Virtual Training" project <sup>10</sup>) funded by the U.S. Department of Education.  
Parteners : Florida International University / Rutgers University / Virginia Tech / ENIB
  - ◊ MoU has been signed ENIB / FIU
  - ◊ One post-doc, one PhD candidat and two M1 students from ENIB moved to FIU
- UNIVERSITY OF MIAMI (UM) : robocup soccer using robots NAO.
  - ◊ Joint publications (see appendix).
  - ◊ U. Visser was a PhD jury member at ENIB (M. Polceanu)
  - ◊ U. Visser is co-supervisor of A. Dizet (PhD) and N. Argaw (PhD)

## International Mobility

Secondment at :

**Company:** Naval Group Pacific, Adelaide, Australia.  
**Topic:** Human-AI interactions  
**Period:** 2023-2025 (2 years)

Delegation at :

**Lab:** CNRS IRL CROSSING <sup>11</sup>, Adelaide, Australia.  
**Topic:** Human-AI interactions  
**Period:** 2021-2023 (3 years)

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<sup>10</sup> <http://ies.ed.gov/ncer/projects/grant.asp?ProgID=21&grantid=1725&NameID=258>

<sup>11</sup> <http://crossing.cnrs.fr>



Visiting scholar at :

- Lab:** Florida International University <sup>12</sup>  
in the School of Computing and Information Sciences, Miami, USA.
- Topic:** Affective virtual character / Virtual classroom.
- Host:** Christine Lisetti, director of Affective Social Computing Laboratory
- Period:** 2018 (2 months) / 2017 (3 months) / 2016 (2 weeks)  
2015 (1 month) / 2014 (3 weeks)
- Lab:** University of Miami <sup>13</sup>, USA.
- Topic:** Robocup Soccer robot NAO.
- Host:** Ubbo Visser, director of AI & Games Group in the Department of Computer Science.
- Period:** 2018 (2 months) / 2017 (3 months) / 2016 (2 weeks)  
2015 (1 month)
- Lab:** University of Granada, the GENEURA GROUP <sup>14</sup>, Spain.
- Topic:** Evolving Behaviour modeling for video games.
- Host:** Antonio M. Mora García, researcher
- Period:** 2013 (3 weeks)

## Grants

### Institutional Grants

- 2023 - 2026 :** [Member] EU project COFUND  
Topic: Interactive robotic and Virtual reality  
Collaboration with UNIVERSITY OF SOUTH AUSTRALIA, RMIT.  
This project supports a PhD thesis.
- 2019 - 2023 :** [Co-PI] PROG4YU ANR project hosted by the LIG <sup>15</sup>.  
Topic: Interaction between human and robot.  
Collaboration with LIG, LIP, PROTOTIG.  
≈ 160 K €
- 2021 - 2022:** [Co-PI] Defense (AID) project  
Topic: Meteo Forecast  
Collaboration with EXWEX.  
≈ 18 K €
- 2021 - 2023:** [PI] Britany Region  
Topic: Interaction between human and robot.  
Collaboration with FLINDERS UNIVERSITY.  
≈ 8 K €
- 2020 - 2022:** [PI] Britany Region  
Topic: RoboCup.  
Collaboration with FLINDERS UNIVERSITY + THE UNIVERSITY OF ADELAIDE.  
≈ 17 K €

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<sup>12</sup> <http://www.miami.edu/>

<sup>13</sup> <http://www.fiu.edu/>

<sup>14</sup> <http://geneura.wordpress.com>

<sup>15</sup> <http://prog4yu.imag.fr/>

- 2021:** [PI] ENIB2020 project  
 Topic: Interaction between human and robot.  
 Collaboration with NAVAL GROUP.  
 ≈ 11 K €
- 2021:** [PI] AFRAN project  
 Topic: Interaction between human and robot.  
 Collaboration with FLINDERS UNIVERSITY (AUSTRALIA).  
 ≈ 2 K €
- 2017 - 2019 :** [Co-PI] REVAM project.  
 Topic: Out of body experience to help patient suffering from anorexia  
 Funding : "Fondation de l'Avenir".  
 ≈ 17 K €
- 2017 - 2021 :** [Member] of the STRATEGIC ANR project hosted by MASA.  
 Topic: Interactive strategical situation.  
 ≈ 130 K €
- 2016 - 2020 :** [Member] of INTERACTIVE VIRTUAL TRAINING (IVT)  
 US project hosted by the Rutgers University.  
 Topic: Serious game for Early Career Teachers in High Poverty Schools.  
 Collaboration with RUTGERS UNIVERSITY, FIU, VIRGINIA TECH.
- 2014 - 2019 :** [Co-PI] SOMBRERO ANR project hosted by the LIG.  
 Topic: Interaction between human and robot.  
 Collaboration with LIG, GIPSA-LAB, ALDEBARAN, LIP.  
 ≈ 118 K €
- 2011 - 2014 :** [Member] FUI project SIFORAS (accredited by the "competitive clusters" Images&Réseaux, I-Trans and Systematic).  
 Topic: a training environment for industrial processes.  
 Collaboration with ALSTHOM, DCNS, NEXTER, RENAULT, SNCF, DAF CONSEIL, DELTACAD, CEA LIST, INSA, ENISE.

### Industrial Grants

- 2022 - 2025 :** [PI] ARIANEGROUP  
 Topic: predictive maintenance.  
 This project supports a PhD thesis (CIFRE Defense AID).  
 ≈ 75 K €+ PhD salary
- 2020 - 2023 :** [PI] SEGULA  
 Topic: Semantic Segmentation  
 This project supports a PhD thesis.  
 ≈ 48 K €+ PhD salary
- 2020 - 2023 :** [Co-PI] THALES  
 Topic: 3D Mapping  
 This project supports a PhD thesis (CIFRE).  
 ≈ 10 K €+ PhD salary
- 2019 - 2020 :** [PI] ERICSSON  
 Topic: object detection in industrial context.  
 This project supported master thesis.  
 ≈ 14 K €
- 2020 - 2024 :** [PI] CERVVAL  
 Topic: Machine Learning in robotic, application to the robocup soccer.  
 This project supported PhD thesis.  
 ≈ 60 K €+ PhD salary

- 2016 - 2018** : [PI] ERICSSON  
 Topic: object detection by vision for connected tennis.  
 This project supported master thesis.  
 ≈ 14 K €
- 2015 - 2020** : [PI] DIAGNOSTICA-STAGO  
 Topic: medical decision.  
 This project supported a PhD thesis (CIFRE) and a master thesis.  
 ≈ 130 K €
- 2009 - 2018** : [PI] VIRTUALYS  
 Topic: adaptive believable behaviors.  
 This project supported three PhD thesis (CIFRE).  
 ≈ 100 K €+ PhD salary
- 2012 - 2016** : [PI] STDI-EMD  
 Topic: the exploitation of educational content.  
 This project funds a PhD thesis in human science (CIFRE).  
 ≈ 110 K €+ PhD salary
- 2010 - 2015** : [PI] DIAGNOSTICA-STAGO  
 Topic: medical training.  
 This project supported a PhD thesis and two experiments driven by psychologists  
 (test the device on 60 users for 3 weeks).  
 ≈ 150 K €+ PhD salary
- 2012** : [Co-PI] DCNS  
 Topic: Managing human teams; training with virtual reality.  
 Collaboration with UTC/HEUDIASYC, ECAM, ENSTA, DCNS, I-MAGINER, DAESIGN,  
 STUDEC. This project supported a PhD thesis.  
 ≈ 80 K €+ PhD salary

## Invited Speaker

- 2023** : CSIRO, Adelaide, Australia  
**2023** : Museum of Contemporary Art, Sydney, Australia  
**2022** : University of Swinburne, Melbourne, Australia  
**2022** : Defence Science and Technology Group (DSTG), Adelaide, Australia  
**2022** : University of South Australia (UniSA), Adelaide, Australia  
**2022** : Australian National University (ANU), Canberra, Australia  
**2022** : Embassy of France, Canberra, Australia  
**2021** : The University of Adelaide, Psychology School, Australia  
**2021** : Flinders University, Australia  
**2021** : The University of Adelaide, Robotic Group, Australia  
**2020** : RoboCup@Home Education Online classroom (Invited Lecture Series)  
**2019** : Moscow State University (MSU), Russia  
**2019** : Skoltech, Russia  
**2019** : Moscow Institute of Physics and Technology, Russia  
**2019** : Higher School of Economics (HSE), Moscow, Russia  
**2019** : National University of Science and Technology (MISiS), Moscow, Russia  
**2019** : ITMO (Russia's National Research Universities), St Petersburg, Russia  
**2019** : Saint Petersburg State University (SPbGU), Russia  
**2019** : Russian Academy Of Science, Siberian Branch, Russia  
**2019** : GDR IA, Paris  
**2019** : Table ronde sur l'Intelligence Artificielle, Mairie de Vannes.

2019 : Technopole Quimper.  
2017 : IUT Vannes.  
2014 : University of Miami, FL, USA  
2014 : Florida International University, FL, USA  
2014 : Arts, Sciences and Technology University, Beirut, Lebanon.  
2006 : LIUM Laval  
2006 : LIMSI Paris  
2006 : IRIT / UT1 Toulouse  
2006 : IRISA Rennes

## Dissemination

Full Press: [https://www.enib.fr/~robobreizh/src/en/links\\_en.html](https://www.enib.fr/~robobreizh/src/en/links_en.html)

Selected press :

2023 : Magazine "Science & Vie" published an interview on my research activities  
2022 : France Inter interview "la matinale" on interactive robotic  
2021 : Magazine "l'Usine Nouvelle" published an interview on my research activities  
2018 : Magazine "Planet Robots" published an article on my research activities (2 pages)

## Honors and Awards

### Nomination

2022 : Elected "French of the Year in Australia" <sup>16</sup>  
2021 - 2023 : Professor (Adjunct), the University of Adelaide.  
Visiting Professor, Flinders University.  
2018 - 2020 : Professor (by courtesy), University of Miami.  
2017 : Visiting Professor, University of Miami  
2016 - 2017 : Visiting Professor, Florida International University

### Contests

2023 : 1<sup>st</sup> RoboCup@Home - world champion in social robotic  
2022 : 1<sup>st</sup> RoboCup@Home - world champion in social robotic  
2<sup>nd</sup> Laval Virtual Contest  
2021 : 3<sup>rd</sup> RoboCup@Home  
2020 : 1<sup>st</sup> RoboCup@Home Education  
2017 : Finalist "Angry Birds AI Competition" - IJCAI 2017.  
2016 : Finalist "Angry Birds AI Competition" - IJCAI 2016.  
2015 : 1<sup>st</sup> "Angry Birds AI Competition - Competitive Track" - IJCAI 2015.  
2015 : Semi-Finalist "Angry Birds AI Competition" - IJCAI 2015.  
2015 : 7<sup>th</sup> RoboCup@Simulation  
2014 : Semi-Finalist "Angry Birds AI Competition" - ECAI 2014.  
2013 : Finalist "Angry Birds AI Competition" - IJCAI 2013.  
2013 : 1<sup>st</sup> "Man vs Machine Challenge at ANU Open Day" - IJCAI 2013.

### Articles Prices

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<sup>16</sup> About 75 000 French people live in Australia, elected in the category Innovation and Research.

**2012** : Best Paper Award, international conference GAMEON 2012 in Malaga (Spain).

**2012** : Excellence Award, international conference ICVL 2012 in Braşov (Romania).

## Participation in Working Groups

**2010 - present** : French Artificial Intelligence Association (AFIA)

**2010 - 2018** : French Virtual Reality Association (AFRV)

**2011 - 2015** : European Association for Virtual Reality and Augmented Reality (EuroVR)

## Expert

### Panels

| Habilitation ( <b>HDR</b> ) |           |        | <b>PhD</b> |           |        | <b>Total</b> |
|-----------------------------|-----------|--------|------------|-----------|--------|--------------|
| reviewer                    | president | member | reviewer   | president | member |              |
| 1                           | 0         | 1      | 6          | 4         | 13     | <b>25</b>    |

Detail in appendix.

### Mission for French Embassies

**2019 (1 week)** : Expert for the French Embassy in Russia.

The objective of this mission was to assess AI advances in Russia, visiting the main actors (Ministries, Universities, Research Institutes, Companies). A confidential report has been written for the French government.

**2019 (1 week)** : Expert for the French Embassy in India.

The objective of this mission was to make connections with the research institutes.

### Expert

**2023 - 2024** : CTI (Commission of the Engineer Degree).

**2022** : Academic referee for University of Melbourne.

**2021** : LIG funding program.

**2020** : Fench Army PhD funding program (DGA/AID).

**2019 - 2021** : Competition of the best programmer challenge AXA in France.

**2019** : Chilean National Fund for Science and Technology.

**2019** : Fonds de recherche du Québec Nature et technologies (FRQNT).

**2016** : Programs of the Excellence Initiative (IdEx).

**2016** : Natural Sciences and Engineering Research Council of Canada (NSERC)

**2014 - 2020** : Competition Laval Virtual Awards.

**2014** : Programs of the Excellence Initiative (IdEx).

**2014** : "Programme de Recherche Futur & Ruptures" (Mine-Telecom)

**2012 - present** : ANR (French National Research Agency). One expertise a year.

**2011 - present** : ANRT (French National Research and Technology Agency). One expertise a year.

## PhD Committee (CSI)

- 2020 - present : R. Ly, LIG.
- 2019 - 2021 : T. Cataluppi, LIG.
- 2017 - 2020 : N. Foulquier, LATIM.
- 2015 : N. Thanh Khoa, UBO.

## Hiring Committees

- 2022 : Internal member, position of professor, ENIB.
- 2020 : External member, position of a/professor, ENS Mines-Télécom.
- 2018 : External member, position of a/professor, Toulouse University.
- 2017 : External member, researchers' evaluation, University College Dublin (UCD).
- 2011 : External member, position of a/professor, UBO.

## Organization of Scientific Events

- 2023 : General chair of the RoboCup symposium (rank: B)
- 2022-present : RoboCup@Home - Organizing Committee
- 2021-present : RoboCup Soccer SPL - Organizing Committee
- 2018 : Co-organizer of the contest Humanoid Open at Brest
- 2016 - 2020: Co-organizer of the conference AAAI (FLAIRS), USA <sup>17</sup>
- 2016 + 2017 : Co-organizer of the AI contest in the conf. "Plate-Forme d'Intelligence Artificielle"
- 2016 : Co-organizer of the research day "AI&VR" (common AFIA/AFRV), Paris
- 2015 : Co-organizer of the conference day Video Games & AI
- 2007 - 2008 : Co-organizer of the IEEE conference "Virtual Reality Internat. Conference" <sup>18</sup>
- 2006 : Coordinator of CNRS summer school EIAH <sup>19</sup> (Virtual Learning Environments)

## Reviewing

**Journals** : Nature, Neural Networks, International Journal of Human-Computer Interaction, Journal of Multimodal User Interfaces, Computers & Graphics, Frontiers in VR, Frontiers in Psychology, Frontiers in Robotics and AI, Artificial Intelligence in Medicine, Fuzzy Sets And Systems, Computer in Industry, Computer Animation and Virtual Worlds, Applied Soft Computing, Simulation Modelling Practice and Theory, Journal of Virtual Reality and Broadcasting ...

**Conferences** : ICRA, ICCV, CVPR, ECIS, IEEE VR, ISMAR, ACE, CGI, IEEE SMC, GRAPP, ICIDS, PAAMS, EvoGames, IRC, ARTECH, ICVRV, BESC, GAMEON, WACAI, RaPC, PFIA, CNIA, APIA

More information in appendix

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<sup>18</sup> <http://www.flairs-29.info> + <http://www.flairs-30.info> + <http://www.flairs-31.info>

<sup>19</sup> <http://www.laval-virtual.org>

<sup>20</sup> EIAH : Environnement Informatique d'Apprentissage Humain <http://www.lirmm.fr/eiah2006>

## Appendix : Review

### Journals:

| Name  | Impact Fact. | Publisher      | Rank |
|---|--------------|----------------|------|
| Nature  | 69.5         | Springer       | A    |
| Neural Networks   | 2.516        | Elsevier       | A    |
| Artificial Intelligence in Medicine   | 2.019        | Elsevier       | A    |
| Fuzzy Sets And Systems  | 1.875        | Elsevier       | A    |
| International Journal of Human-Computer Interaction                         | 3.3          | Wiley          | A    |
| Journal of Multimodal User Interfaces                                       | 2.2          | Springer       | B    |
| Computers & Graphics  | 1.8          | Elsevier       | B    |
| Computer Animation and Virtual Worlds                                       | 0.424        | Wiley          | B    |
| Computer in Industry  | 4.76         | Elsevier       | B    |
| Applied Soft Computing  | 2.084        | Elsevier       | C    |
| Simulation Modelling Practice and Theory                                    | 0.728        | Elsevier       | C    |
| Journal of Virtual Reality and Broadcasting                                 |              | Online         | C    |
| Journal of Medical Internet Research  | 5.175        | Online         | C    |
| Frontiers in VR   | 5.1          | Springer       |      |
| Frontiers in Psychology   | 4.2          | Springer       |      |
| Frontiers in Robotics and AI  | 3.3          | Springer       |      |
| Nurse Education Today   | 3.42         | Elsevier       |      |
| Teaching and Teacher Education  | 3.591        | Elsevier       |      |
| Transact. on Computational Intelligence and AI in Games                     | 1.63         | IEEE           |      |
| Entertainment Computing   | 1.615        | Elsevier       |      |
| Inter. Journal of Electrical and Computer Engineering                       |              |                |      |
| Advanced Technology for Learning  |              | ACTA Press     |      |
| Chinese Journal of Aeronautics  |              |                |      |
| Recent Patents on Computer Science  |              | Benthamscience |      |
| Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées |              |                |      |

**Conferences:**

| Name  | Rank |
|---|------|
| IEEE International Conference on Robotics and Automation (ICRA)                       | A    |
| International Conference on Computer Vision (ICCV)                                    | A    |
| IEEE Computer Vision and Pattern Recognition Conference (CVPR)                        | A    |
| European Conference on Information Systems (ECIS)                                     | A    |
| IEEE Virtual Reality international conference (IEEE VR)                               | A    |
| IEEE/ACM International Symposium on Mixed and Augmented Reality (ISMAR)               | A    |
| Advances in Computer Entertainment technology (ACE)                                   | B    |
| Computer Graphics International (CGI)   | B    |
| IEEE International Conference on Systems, Man, and Cybernetics (SMC)                  | B    |
| International Conference on Computer Graphics Theory and Applications (GRAPP)         | B    |
| International Conference on Interactive Digital Storytelling (ICIDS)                  | C    |
| Inter. Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS) | C    |
| EvoGAMES  |      |
| IEEE International Conference on Robot Computing (IRC)                                |      |
| Conference on Digital Arts (ARTECH)   |      |
| International Conference on Virtual Reality and Visualization (ICVRV)                 |      |
| Behavioral, Economic and Socio-Cultural Computing (BESC)                              |      |
| Eurosis GAMEON  |      |
| Workshop Affect, Compagnon Artificiel, Interaction (WACAI)                            |      |
| RàPC - Raisonnement à partir de cas   |      |
| Plate-Forme Intelligence Artificielle (PFIA)  |      |
| Conférence Nationale en Intelligence Artificielle (CNIA)                              |      |
| Applications Pratiques de l'Intelligence Artificielle (APIA)                          |      |

**Books:**

| Title  | Publisher  |
|--|--|
| <i>Intelligent and Adaptive Educational-Learning Systems: Achievements and Trends</i>                | Springer (serie "Smart Innovation, Systems and Technologies" <sup>20</sup> ) |
| <i>La modélisation des activités managériales au défi de la formation. Analyse d'un serious game</i> | L'Harmattan  |

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<sup>21</sup> <http://www.springer.com/series/8767>



## Appendix : Supervision

### Engineer (3)

- 2022 - 2023 : T. Ung  
Topic: RoboCup
- 2022 - 2023 : L. Li  
Topic: RoboCup / video games engine
- 2018 : A. Legeleux  
Topic: Machine Learning in robotic

### Postdoct (2)

- 2021 - 2022 : N. Beu  
Topic: Human activities monitoring
- 2016 - 2018 : M. Polceanu  
Topic: Machine Learning in robotic

### PhD Supervisor (19 + 3 abort)

- 2023 - present : J. Alkenani - Supervision (50 %) shared with R. Querrec  
Topic: Interaction Human / Robot
- 2023 - present : H. Beshada Balcha - Supervision (50 %) shared with P. Rauffet  
Topic: Interaction Human / Robot
- 2022 - present : JV Autran - Supervision (50 %) shared with JP. Diguët  
Topic: Predictive Maintenance
- 2021 - present : M. Neau - Supervision (25 %) shared with P. Santos / K. Sammut / AG. Bosser  
Topic: Machine Learning for robot
- 2020 - present : A. Dizet - Supervision (50 %) shared with U. Visser  
Topic: Machine Learning for robot
- 2020 - 2024 : Y. Habib - Supervision (50 %) shared with P. Papadakis  
(3.5 years) Topic: SLAM
- 2020 - 2023 : N. Wondimu - Supervision (50 %) shared with U. Visser  
(3 years) Topic: Interactive robotic
- 2020 - 2023 : R. Cazorla - Supervision (50 %) shared with P. Papadakis  
(3 years) Topic: Factory 4.0 and machine learning
- 2019 - 2023 : Y. Glemarec - Supervision (25 %) shared with AG Bosser/JL Lugin/M Latoschik  
(3.5 years) Topic: Combining an Atmosphere model and Narrative model
- 2020 - 2022 : C. Le Bono - Supervision (50 %) shared with P. Papadakis and C. Lohr  
(abort) Topic: Robotic
- 2019 - 2022 : A. Legeleux - Supervision (50 %) shared with D. Duhaut  
(3.5 years) Topic: Machine Learning for robot
- 2016 - 2020 : A. Manoury - Supervision (50 %) shared with M. Nguyen  
(abort) Topic: Increment learning in robotic
- 2017 - 2020 : F. Lasso - Supervision (50 %) shared with P. Redou  
(3.5 years) Topic: Incremental auto encoder
- 2016 - 2020 : A. Delamarre - Supervision (50 %) shared with C. Lisetti  
(4 years) Topic: Virtual environment for training, for early career teachers (USA)
- 2017 - 2020 : S.A. Walleign - Supervision (50 %) shared with T. Jemal / M. Polceanu  
(3 years) Topic: An Intelligent System for Coffee Grading and Disease Identification
- 2017 - 2018 : A. Chedi - Supervision(50 %) shared with L. Ben Said and L. Rejeb

- (abort ) Topic: Learning Classifier Systems Under Uncertainly  
**2015 - 2019** : C. Even - Supervision (70 %) shared with A-G Bosser  
 (3.5 years ) Topic: Believable Agent Assessment  
**2012 - 2016** : Y. Cardin - Supervision (30 %) shared with C. Bossard  
 (3.5 years ) Topic: Activitis Analysis for firefighters  
**2012 - 2015** : J. Soler - Supervision(70 %) shared with L. Gaubert  
 (3.5 years ) Topic: Virtual Training Environments  
**2012 - 2015** : M. Polceanu - Supervision (100 %)  
 (3 years ) Topic: Mental simulation for agent controller  
**2009 - 2013** : F. Le Corre - Supervision (50 %) shared with R. Querrec  
 (3.5 years ) Topic: Intelligent Tutoring System  
**2008 - 2011** : F. Tence - Supervision (70 %) shared with P. De Loor  
 (3 years ) Topic: Imitation Learning for Believable Agent

### **Research Masters Thesis Supervisor (28)**

- 2023** : E. Devignon - Supervision (100 %)  
**2023** : L.M. D'aviau de Ternay - Supervision (100 %)  
**2023** : G. Paton - Supervision (50 %)  
**2023** : E. Cottour - Supervision (50 %)  
**2023** : P. Cornen - Supervision (50 %)  
**2022** : Duc Nhan Do - Supervision (100 %)  
**2022** : T. Jiang - Supervision (100 %)  
**2022** : L. Li - Supervision (100 %)  
**2022** : T. Ung - Supervision (100 %)  
**2022** : A. Pecout - Supervision (100 %)  
**2021** : M. Neau - Supervision (100 %)  
**2020** : E. Le Chevoir - Supervision (100 %)  
**2020** : C. Le Bono - Supervision (50 %)  
**2019** : F. Auger - Supervision (30 %)  
**2018** : A. Legeleux - Supervision (50 %)  
**2017** : A. Petac - Supervision (100 %)  
**2016** : A. Delamarre - Supervision (100 %)  
**2015** : C. Even - Supervision (50 %)  
**2015** : G. Biannic - Supervision (50 %)  
**2011** : A. Jeannin-Girardon - Supervision (50 %)  
**2011** : Y. Cardin - Supervision (50 %)  
**2008** : F. Tence - Supervision (100 %)  
**2008** : T. H. Trinh - Supervision (100 %)  
**2007** : E. Creac'h - Supervision (100 %)  
**2004** : G. Faudet - Supervision (100 %)

## Appendix : Panels

### Habilitation (HDR) Examination Panels (2)

#### Reviewer (1)

2021 : D. Panzoli. IRIT.

#### Member (1)

2023 : P. Papadakis. IMTA.

### PhD Examination Panels (23)

#### Reviewer (6)

2023 : R. Ly. Université de Grenoble Alpes.

2023 : S. Rasendrasoa. Université de Rouen Normandie.

2018 : K. Tcha-Tokey. ENSAM ParisTech.

2017 : A. Arora. Université de Grenoble.

2017 : T. Allart. UBISOFT/CNAM.

2012 : H. Hamdi. Université Le Mans.

#### President (4)

2022 : A. Majed. ENSTA.

2022 : T. Chaffre. ENSTA.

2021 : P. Gautier. UBS.

2020 : N. Foulquier. UBO.

#### Member (13)

2023 : R. Cazorla. ENIB.

2023 : Y. Glemarec. ENIB.

2023 : N. Argaw. ENIB.

2022 : A. Legeleux. UBS.

2020 : A. Delamarre. Florida International University (USA).

2020 : F. Lasson. ENIB.

2020 : S. Wallelign. ENIB.

2019 : C. Even. ENIB.

2016 : Y. Cardin. UBO.

2015 : M. Polceanu. UBO.

2015 : J. Soler. UBO.

2013 : F. Le Corre. UBO.

2011 : F. Tencé. UBO.

## Appendix : Publications

### Summary

| Status          | Year         | <i>Inter. Journals</i> | <i>National Journals</i> | <i>Inter. Conf.</i> | <i>Preprints</i> | <i>National Conf.</i> |
|-----------------|--------------|------------------------|--------------------------|---------------------|------------------|-----------------------|
| Full Professor  | 2023         | 1                      |                          | 10                  | 2                |                       |
|                 | 2022         | 1                      |                          | 5                   | 1                |                       |
|                 | 2021         | 4                      |                          | 2                   | 1                |                       |
|                 | 2020         | 2                      |                          | 4                   |                  |                       |
|                 | 2019         |                        |                          | 6                   |                  |                       |
| A.Prof. (HDR)   | 2018         | 1                      |                          | 7                   |                  |                       |
|                 | 2017         | 1                      |                          | 3                   |                  |                       |
|                 | 2016         | 2                      |                          | 2                   |                  |                       |
|                 | 2015         | 1                      |                          | 2                   |                  |                       |
|                 | 2014         |                        |                          | 1                   |                  |                       |
|                 | 2013         | 3                      |                          | 7                   |                  | 1                     |
|                 | 2012         |                        |                          | 2                   |                  | 1                     |
| A. Prof.        | 2011         | 3                      |                          | 1                   |                  |                       |
|                 | 2010         | 2                      |                          | 3                   |                  |                       |
|                 | 2009         | 1                      | 1                        |                     |                  |                       |
|                 | 2008         | 1                      |                          | 2                   |                  |                       |
|                 | 2007         |                        |                          |                     |                  | 1                     |
| Assistant Prof. | 2006         |                        | 3                        |                     |                  |                       |
| PhD             | 2005         | 1                      |                          | 4                   |                  |                       |
|                 | 2004         | 2                      |                          | 1                   |                  | 1                     |
|                 | 2003         |                        |                          | 4                   |                  |                       |
|                 | 2002         |                        |                          | 2                   |                  | 1                     |
|                 | <b>Total</b> | 26                     | 4                        | 68                  | 4                | 5                     |

## References

### International Journal Articles (26)

Notes:

WoS: WebOfScience

Rank: Computer Science Reference Code (ERA-CORE)

Q: Scientific Journal Rankings (SJR)

- [1] **Buche C.**, Lasson F. and Kerdelo S. (2023). Conditional autoencoder pre-training and optimization algorithms for personalized care of hemophiliac patients. *Frontiers in Artificial Intelligence*. 6  
[Q2]
- [2] Glemarec Y., Lugrin J.L., Bosser A.G., **Buche C.**, and Latoschik M.E. (2022). Controlling the STAGE: A High-Level Control System for Virtual Audiences In Virtual Reality *Frontiers in Virtual Reality*. 3  
[Impact factor = 5.1]
- [3] Even C., Bosser A.G. and **Buche C.** (2021). Assessing the Believability of Computer Players in Video Games : a new Protocol and Computer Tool. *Frontiers in Computer Science*. 3, 121.  
[Q2,Impact factor = 2.4]
- [4] Glemarec Y., Lugrin J.L., Bosser A.G., Collins-Jackson A., **Buche C.**, and Latoschik M.E. (2021). Indifferent or Enthusiastic? Virtual Audiences Animation and Perception in Virtual Reality. *Frontiers in Virtual Reality*. 72(2).  
[Impact factor = 5.1]
- [5] Delamarre A., Shernoff E., **Buche C.**, Frazier S., Gabbard J. and Lisetti C. (2021). The Interactive Virtual Training for Teachers (IVT-T) to Practice Classroom Behavior Management. *International Journal of Human - Computer Studies*. 152.  
[Q1,Impact factor = 3.1, Rank:A]
- [6] Nguyen S.M. , Duminy N. , Manoury A. , Duhaut D. and **Buche C.**, (2021). Robots Learn Increasingly Complex Tasks with Intrinsic Motivation and Automatic Curriculum Learning : Domain Knowledge by Emergence of Affordances, Hierarchical Reinforcement and Active Imitation Learning. *Künstliche Intelligenz*. 35, 81-90  
[Q2]
- [7] Shernoff E.S., Schalscha K.V., Gabbard J., Delamarre A., Frazier S.L., **Buche C.** and Lisetti C., (2020). Evaluating the Usability and Instructional Design Quality of Interactive Virtual Training for Teachers (IVT-T) *Educational Technology Research and Development*. 68, 3235-3262  
[5-year impact factor = 2.75]
- [8] **Buche C.**, Even C. and Soler J. (2020). ORION : A Generic Model and Tool for Data Mining. *Transactions on Computational Science (TCSC)*. LNCS vol 12060, 1-25
- [9] Shernoff E.S., Frazier S.L., Lisetti C., **Buche C.**, Lunn S., Brown C., Delamarre A., Chou T., Gabbard J. and Morgan E. (2018). Bridging Simulation Technology with Evidence-Based Behavior Management Practices to Support Early Career Teachers: An Interdisciplinary Approach. *Journal of Technology and Teacher Education*. 26(2), 299-326.  
[Acceptance rate : 15%]
- [10] Hoareau C., Querrec R., **Buche C.** and Ganier F. (2017). Evaluation of internal and external validity of a virtual environment for learning a long procedure. *International Journal of Human-Computer Interaction (IJHCI)*. 33(10):786-798.  
[Q2, WoS, Rank :B]
- [11] Polceanu M. and **Buche C.** (2016). Computational mental simulation: a review. *Computer Animation and Virtual Worlds*. 28(5).  
[Q3, WoS, Rank :B]

- [12] **Buche C.**, N. Le Bigot and Polceanu M. (2016). Simulation within Simulation for Agent Decision-Making: Theoretical Foundations from Cognitive Science to Operational Computer Model. *Cognitive Systems Research*. 40:46-58.  
[Q2, 5-year Impact factor = 1.3]
- [13] Richir S., Fuchs F., Lourdeaux D., Millet D., **Buche C.** and R. Querrec (2015). How to design compelling Virtual Reality or Augmented Reality experience? *International Journal of Virtual Reality (IJVR)*. 15(1):35-47.  
[Rank :C]
- [14] Tence F., Gaubert L., Soler J., De Loor P. and **Buche C.** (2013). Stable Growing Neural Gas: a Topology Learning Algorithm based on Player Tracking in Video Games. *Applied Soft Computing*. 13(10):4174-4184.  
[Q1, Impact factor = 2.6, Rank :C]
- [15] Tence F., Gaubert L., Soler J., De Loor P. and **Buche C.** (2013). CHAMELEON: Online Learning for Believable Behaviors based on Humans Imitation in Computer Games. *Computer Animation and Virtual Worlds*. 24(5):477-495.  
[Q3, WoS, Rank :B]
- [16] **Buche C.**, and De Loor P. (2013). Anticipatory behavior in virtual universe, application to a virtual juggler. *Computer Animation and Virtual Worlds*. 24(2):111-125.  
[Q3, WoS, Rank :B]
- [17] **Buche C.**, Jeannin-Girardon A. and De Loor P. (2011). Simulation theory and anticipation as a basis for interactive virtual character in an uncertain world. Application to a human-virtual characters interaction for juggling. *Computer Animation and Virtual Worlds, Computer Animation and Social Agents (CASA'11) Special Issue*. 22(2-3):133-139.  
[Acceptance rate: 18% (28/154 papers), WoS, Rank :B].
- [18] **Buche C.** and Querrec R (2011). An expert system manipulating knowledge to help human learners into virtual environment. *Expert Systems With Applications*. 38(7):8446-8457.  
[Q1, Impact factor= 2.9, WoS, Rank :B].
- [19] Pasco D., Bossard C., **Buche C.** and Kermarrec G. (2011). Using Exergames to Promote Physical Activity: A Literature Review. *Sport Science Review*, 1, 77-93
- [20] **Buche C.**, Chevaillier P., Nédélec A., Parenthoën M. and Tisseau J. (2010). Fuzzy Cognitive Maps for the simulation of individual adaptive behaviors. *Computer Animation and Virtual Worlds*. 21(6):573-587.  
[Q3, WoS, Rank :B]
- [21] **Buche C.**, Bossard C., Querrec R. and Chevaillier P. (2010). PEGASE: A Generic and Adaptable Intelligent System for Virtual Reality Learning Environments. *International Journal of Virtual Reality*. 9(2):1-13.  
[Rank :C]
- [22] Trinh T-h, **Buche C.**, Querrec R and Tisseau J. (2009). Modeling of Errors Realized by a Human Learner in Virtual Environment for Training. *International Journal of Computers, Communications and Control*. 4(1):73-81.  
[Q3, WoS]
- [23] Bossard C., Kermarrec G. and **Buche C.** (2008). Transfer of learning in virtuals environments. *Virtual Reality*. (12):151-161.  
[Q2, Rank :B]
- [24] **Buche C.**, Querrec R., Chevaillier P. and Kermarrec G. (2005). Apports des systèmes tutoriaux intelligents et de la réalité virtuelle à l'apprentissage de compétences. *In Cognito – Cahiers Romains de Sciences Cognitives (CRSC)*, 2(2):53-87.
- [25] **Buche C.**, Querrec R., De Loor P. and Chevaillier P. (2004). MASCARET : A pedagogical multi-agent system for virtual environment for training. *International Journal of Distance Education Technologies (JDET)*, 2(4):41-61.  
[Q3]

- [26] Querrec R., **Buche C.**, Maffre E. and Chevallier P. (2004). Multiagents systems for virtual environment for training. application to fire-fighting. *International Journal of Computers and Applications (IJCA)*, 1(1):25–34.  
[Q4]

### International Conference Articles (68)

- [27] Neau M., Santos P., Bosser AG. and **Buche C.** (2023). Fine-Grained is Too Coarse: A Novel Data-Centric Approach for Efficient Scene Graph Generation. *International Conference on Computer Vision (ICCV), Workshop on Scene Graphs and Graph Representation Learning (SG2RL)*.
- [28] Habib, Y., Papadakis, P., Fagette, A. Le Barz, C. Gonçalves, T. and **Buche C.** (2023). From sparse SLAM to dense mapping for UAV autonomous navigation. *SPIE 12525, Geospatial Informatics XIII , 125250C*.  
[Rank :B].
- [29] Glémarec Y., Lugrin J.L., Hörmann, A., Bosser A.G., **Buche C.**, Latoschik M.E. and Lauer, N. (2023). Towards Virtual Audience Simulation For Speech Therapy. *Intelligent Virtual Agents (IVA)* .  
[Rank :B].
- [30] Wondimu N., Neau M., Dizet A., Visser U. and **Buche C.** (2023). Anthropomorphic Human-Robot Interaction Framework: Attention Based Approach. *RoboCup Symposium*. LNCS Springer.  
[Rank :B].
- [31] Li L., Neau M., Ung T. and **Buche C.** (2023). Crossing Real and Virtual : Pepper Robot as an Interactive Digital Twin. *RoboCup Symposium*. LNCS Springer.  
[Rank :B].
- [32] Neau M., Santos P., Bosser AG. and **Buche C.** (2023). In Defense of Scene Graph Generation for Human-Robot Open-Ended Interaction in Service Robotics. *RoboCup Symposium*. LNCS Springer.  
[Rank :B].
- [33] Wang S., Neau M. and **Buche C.** (2023). RoboNLU: Advancing Command Understanding with a Novel Lightweight BERT-based Approach for Service Robotics. *RoboCup Symposium*. LNCS Springer.  
[Rank :B].
- [34] Habib Y., Papadakis P., Le Barz C., Fagette A., Gonçalves T. and **Buche C.** (2023). Densifying SLAM for UAV navigation using volumetric fusion of monocular depth prediction. *9<sup>th</sup> International Conference on Automation, Robotics and Applications (ICARA), pages 225-229*.
- [35] Wondimu, N., Visser, U. and **Buche C.** (2023). Interactive Video Saliency Prediction: The Stacked-convLSTM Approach. *15<sup>th</sup> International Conference on Agents and Artificial Intelligence (ICAART)*. Vol 2, pages 152-168.  
[Rank :B].
- [36] Wondimu, N., Visser, U. and **Buche C.** (2023). A New Approach to Moving Object Detection and Segmentation: The XY-shift Frame Differencing. *15<sup>th</sup> International Conference on Agents and Artificial Intelligence (ICAART)*. Vol 3, pages 309-318.  
[Rank :B].
- [37] **Buche C.**, Neau, M., Ung T., Li L., Jiang T., Barange M. and Bouabdelli M. (2022). Robo-Breizh, RoboCup@Home SSPL Champion 2022. *RoboCup Symposium*. 13561, LNCS Springer. Pages 203-2014.  
[Rank :B].

- [38] Cazorla R., Pionel L., Papadakis P. and **Buche C.** (2022). Reducing domain shift in synthetic data augmentation for semantic segmentation of 3D point clouds. *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, pages 1198-1205.  
[Rank :B].
- [39] Donjat J., Legeleux A., **Buche C.** and Duhaut D. (2022). Temporal Alignment and Demonstration Selection as Pre-processing Phase for Learning by Demonstration. *35<sup>th</sup> International Florida Artificial Intelligence Research Society Conference (FLAIRS)*. AAAI Press.  
[Rank :C].
- [40] Legeleux A., **Buche C.** and Duhaut D. (2022). Gaussian Mixture Model with Weighted Data for Learning by Demonstration. *35<sup>th</sup> International Florida Artificial Intelligence Research Society Conference (FLAIRS)*. AAAI Press.  
[Rank :C].
- [41] Neau M., Santos P., Bosser A.G., Beu N. and **Buche C.** (2022). Commonsense Reasoning for Identifying and Understanding the Implicit Need of Help and Synthesizing Assistive Actions. *AAAI 2022, Spring Symposium on Combining Machine Learning and Knowledge Engineering (AAAI-MAKE 2022)*.
- [42] Glémarec Y., Lugrin J.L., Bosser A.G., **Buche C.**, and Latoschik M.E. (2021). Conference Talk Training With a Virtual Audience System. *ACM Symposium on Virtual Reality Software and Technology (VRST)*.  
[Poster, Rank:A].
- [43] Cazorla R., Pionel L., Papadakis P. and **Buche C.** (2021). Bottleneck Identification to Semantic Segmentation of Industrial 3D Point Cloud Scene via Deep Learning. *International Joint Conference on Artificial Intelligence (IJCAI)*, pages 4877-4878.  
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