

PERSONAL INFORMATION

Silviu-Luis BUTNARIU



✉ [butnariu@unitbv.ro](mailto:butnariu@unitbv.ro)

POSITION  
IOSUD UTBV

PhD Coordinator  
Doctoral studies field: Mechanical Engineering  
Since 2016 (O.M. 5981/8.12.2016)

EXPERTISE FIELD AND  
RESEARCH INTEREST  
AREAS

Mechanical transmissions, parametric mechanical design, scan techniques and 3D reconstruction, motion tracking systems (tracking), project management, product development, finite element analysis, mechanisms and machine elements, robotics, mechatronics, virtual manufacturing, virtual testing and virtual design, reconstruction of cultural heritage.

WORK EXPERIENCE

from oct. 2017

**Professor dr. eng.**

Transilvania University from Braşov, 29 Eroilor Blvd, Braşov, <http://www.unitbv.ro>, Education, scientific research.

Holder of the courses of Machine Organs, Finite Element Analysis (Faculty of Mechanical Engineering, areas of studies Transport and Traffic Engineering, Automotive Engineering).

Education

oct. 2014 - 2017

**Assoc. Professor dr. eng.**

Transilvania University from Braşov, 29 Eroilor Blvd, Braşov, <http://www.unitbv.ro>, Education, scientific research.

- education - teacher within the Department of Automotive Engineering;
- research within the Virtual Reality and Robotics Laboratory ;
- research projects, projects funded from cohesion funds.

Education

febr. 2008 – sept.2014

**Lecturer dr. eng.**

Transilvania University from Braşov, 29 Eroilor Blvd, Braşov, <http://www.unitbv.ro>, Education, scientific research.

- education - teacher within the Department of Automotive Engineering;
- research within the Virtual Reality and Robotics Laboratory ;
- research projects, projects funded from cohesion funds.

Education

jan. 2007 – jan. 2008

**Cercetător postdoctoral**

Transilvania University from Braşov, 29 Eroilor Blvd, Braşov, <http://www.unitbv.ro>, Education, scientific research.

- research within the Virtual Reality and Robotics Laboratory ;
- research projects, projects funded from cohesion funds.

Research

jan. 2005 – jan. 2007

**Technical and Production Director, Quality Manager**

SC SIRCUC BRAŞOV SA, Fdt. Hărmanului nr.15, Braşov, <http://www.sircucbrasov.ro>, Production; machine tools manufacturing and maintenance.

- coordination of the commercial, investment, design, technical and production and maintenance departments;
- collaboration with third parties on technical issues, production, authorizations;
- projects with non-reimbursable financing;

- coordinating the quality system implementation activity according to ISO 9001.

#### Industry

#### oct. 1999 – jul. 2004 Designer in Mechanical Engineering

SC CONCEPT 3T SRL Braşov, 94A, 13 Decembrie St. Brasov, RO-500164, <http://www.concept3t.ro>, Design engineering

- design internship at Bureau d 'etude, ATELCO sarl, France;
- design works in mechanical engineering - design of machine tools and devices, interior design objects, technological furniture, special devices, using AutoDesk support;
- launching in manufacturing, tracking the execution and receiving of parts, mechanical subassemblies and special machines.

#### Industry

#### dec. 1996 – jan. 2005 Strategy & Development Manager

SC FARTEC SA Braşov, 15 Stadionului St., Braşov, <http://www.fartectrading.ro>, Production of rubber technical articles: coordination of the company's strategy and development processes; putting into operation large investment objectives (factory for parapharmaceuticals - disposable syringes and infusion kits, manufacturing lines for rubber technical articles, industrial and civil buildings); developing, implementing and maintaining an efficient activity in the department; managing development projects; direct collaboration with the administrative and productive departments of the company; representation functions in relations with state institutions and local administration; coordinating the activity of evaluating the company for privatization.

#### Industry

## EDUCATION AND TRAINING

#### dec. 2016 Habilitation thesis

Mechanical Engineering

#### apr. 2017 Course Certificate

Recovering the Humankind's Past and Saving the Universal Heritage, *Curs online Sapienza University of Rome / coursera.org*

#### jan.-mar. 2013 Statement of Accomplishment

Image and video processing  
*Curs online Duke University / coursera.org*

#### sept.-oct. 2012 Certificate of Completion ANSYS

Specialization in MEF / ANSYS  
Postgraduate course in Finite Element Method, Transilvania University of Brasov

#### mar. – iul. 2008 Postgraduate course in psycho-pedagogy

Pedagogy, psychology, methodology  
Transilvania University of Brasov / education, scientific research  
Postgraduate course 320 hours

#### apr. – iul. 2007 Training of trainers in the automotive industry

Project management, quality management, HR  
University of Technology of Compiegne / Renault France  
Postgraduate course 300 hours

#### oct. 1997 – iul. 2004 PhD Diploma

PhD in the fundamental field of Engineering Sciences, field of Mechanical Engineering  
Transilvania University of Brasov / education, scientific research  
PhD / no frequency

#### 1987 - 1992 Engineer Diploma

Mechanical Engineering, Machine Tools Section, Gh. Asachi University of Iasi, TCM Faculty, Bachelor's Degree 5 years / day courses

#### 1982 - 1986 Machinery and machinery mechanic / Bachelor's degree

Mathematics Physics  
Vatra Dornei Industrial High School, High school / 4 year day courses

PERSONAL SKILLS

Mother tongue(s)

Română

Other language(s)

|          | UNDERSTANDING |         | SPEAKING           |           | WRITING |
|----------|---------------|---------|--------------------|-----------|---------|
|          | Listening     | Reading | Spoken interaction | Listening |         |
| English  | B2            | B2      | B2                 | B2        | B2      |
| Francais | B2            | B2      | B2                 | B2        | B2      |
| Italian  | B2            | A2      | B2                 | A2        | A2      |

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](http://www.cerl.eu)

Communication skills

- Multicultural environment - since 1992 we have been active in a very wide range of fields, ranging from production activities to those of international research or cooperation.
- Teamwork - the positions we have occupied have required good communication skills, teamwork.
- Sports activities - skiing, cycling.
- 

Organisational / managerial skills

- From the position of Head of Development Department I led the work of a team of engineers and economists, I planned and managed the development budget of a large trading company.
- On the other hand, the position of Technical Director implies high competences regarding the management and organization of team work.
- In the last years I have led the research teams in the projects for which I am responsible partner.

Job-related skills

- Areas of competence in scientific research: Mechanical Engineering, Robotics and Mechatronics, Virtual Reality, Machine Parts, Finite Element Method.
- CEEX, PNCDI program evaluator.
- Publications: 6 technical books (single author or co-author) and approximately 39 articles published in magazines or presented at national or international profile conferences.

Digital skills

| SELF-ASSESSMENT                       |                 |                  |                 |                 |
|---------------------------------------|-----------------|------------------|-----------------|-----------------|
| Information processing                | Communication   | Content creation | Safety          | Problem solving |
| Proficient user                       | Proficient user | Proficient user  | Proficient user | Proficient user |
| Replace with name of ICT-certificates |                 |                  |                 |                 |

Hardware: configuration, assembly, troubleshooting, maintenance;

Software: operating systems: DOS, Windows 9X, NT, 2000, XP, 7; Programming languages: Visual Basic, VRML; text editors, graphic editing, spreadsheets (Microsoft Office, Open Office); mechanical engineering design, finite element, dynamic analysis (AutoCAD, Autodesk Inventor, MSC NASTRAN, Maple, ADAMS, VisualNastran 4D Desktop, CATIA, SolidWorks), image processing (Slicer, 3D Doctor, Amira); Internet, email, networks

Other skills

- Participation in projects with community financing, during the last five years, as a long-term expert: POSDRU 133020 Increasing the capacity to integrate students and graduates into the labor market through practical advice and placements; POSDRU 64210 Transnational partnership Universities Enterprises for student practice; short-term expert - Trainer: POSDRU 62468 Professionalization of the teaching career - new skills for actors of changes in education in Harghita and Neamt counties; director and / or responsible partner in UEFISCDI projects of type PN II (SPINE, CHANCE, EXORAS); INTERREG IV project expert: Digital Cities (Brasov City), DISTRICT + (Brasov County).
- Experience in the activity of elaboration, submission and development of projects with community financing.
- Linguistic competence certificate (English) - 2006/2008 Transilvania University of Brasov.
- Diploma in Design, implementation and auditing of management systems in testing / calibration laboratories - initiation in SR EN ISO CEI 17025 - 2008 MRC Craiova.

Driving license ▪ B, 1991.

#### ADDITIONAL INFORMATION

---

- Memberships**
- Vice-president of ROAMET branch Brasov (Romanian Association of Mechanical Transmissions)
  - Member of ARoTMM (Romanian Association of Theory of Machines and Mechanisms)
  - Member of SIAR (Romanian Society of Automotive Engineers)

**Hirsch indexes** IndiceHISI:3; IndiceHScopus:3; IndiceHGS:6.

**Projects** Director / managing partner

1. Robotic assisted brachytherapy, an innovative approach in inoperable cancer therapy period: 2012/2016. funder: UEFISCDI NrContract: 173/2012

2. New haptic system of exoskeleton type for robotics and space automation period: 2012/2015 financer: Romanian Space Agency - ROSA NrContract: 13/2012

3. Diagnostic system and therapy of spinal disorders period: 2014/2017 funder: UEFISCDI NrContract: 227/2014 PN-II-PTPCCA-2013-4-1596

Member

1. ROBOCORE - Robotic assisted prostate biopsy, an innovative method of high precision period: 2014/2016 financer: UEFISCDI, Partnerships, <http://cester.utcluj.ro/robocore/index.html>, NrContract: 247/2014

2. VIRPE - virtual reality for product engineering period: 2006/2008 financer: CEEX M2 NrContract: II-5920/2006

3. NaviEyes - Intelligent Driver Assistant for Smartphones period: 2014/2016 Funder: UEFISCDI, NrContract: 240 of 07/01/2014 (PN-II-PTPCCA- 2013-4-2023)

#### ANEXES

---

**LIST OF RELEVANT PUBLICATIONS /RESEARCH (selection)**

1. S. Butnariu, Engineering eHeritage—A New Approach for Study of Intangible Cultural Heritage. Case Study: The Analysis of the Noise Produced by the Dacian Dracon, Sustainability 2019, 11(8), 2226; <https://doi.org/10.3390/su11082226>
2. S. Butnariu, M. Duguleana, R. Brondi, F. Gîrbacia, C. Postelnicu, M. Carrozzino An interactive haptic system for experiencing traditional archery, Acta Polytechnica Hungarica, issn:1785-8860, (FI 0,9). 2018 , [http://www.uni-obuda.hu/journal/Butnariu\\_Duguleana\\_Brondi\\_Girbacia\\_Postelnicu\\_Carrozzino\\_84.pdf](http://www.uni-obuda.hu/journal/Butnariu_Duguleana_Brondi_Girbacia_Postelnicu_Carrozzino_84.pdf)
3. G-D. Voinea, S. Butnariu, Gh. Mogan, Measuring and geometric modelling of human spine posture for medical rehabilitation purposes using a wearable monitoring system based on inertial sensors, Sensors (ISSN 1424-8220), 2016, 16(12), Special Issue - Body Worn Behavior Sensing (FI 2,033, SRI 1,364), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5298576/>
4. S. Butnariu, A. Georgescu, F. Gîrbacia, Using a natural user interface to enhance the ability to interact with reconstructed virtual heritage environments, Informatica, Vol 40, No 3 (2016), ACM, <http://www.informatica.si/index.php/informatica/article/view/1429>
5. Gîrbacia, F., Butnariu, S., Orman, A. P., Postelnicu, C.: Virtual restoration of deteriorated religious heritage objects using augmented reality technologies , European Journal of Science and Theology Volume: 9 Issue: 2 Pages: 223-231 (FI 0,398), [http://www.ejst.tuiasi.ro/Files/37/23\\_Girbaciaetal.pdf](http://www.ejst.tuiasi.ro/Files/37/23_Girbaciaetal.pdf)
6. Butnariu, S., Talaba, D.: Advanced Approaches Using VR Simulations for Teaching Mechanisms, Eucomes 2010, chapter in New Trends in Mechanism Science, Vol. 5 of the series Mechanisms and Machine Science, pp 519-526, [https://link.springer.com/chapter/10.1007/978-90-481-9689-0\\_60](https://link.springer.com/chapter/10.1007/978-90-481-9689-0_60)
7. Butnariu, S., Gîrbacia, F., Orman, A.: Methodology for 3D reconstruction of objects for teaching virtual restoration, International Journal of Computer Science Research and Application, ISSN/EISSN: 2012-9564, 20129572, 2013 Vol. 03 Issue: 01 Pages: 16-21, [http://www.icvl.eu/2012/disc/structura/icvl/documente/pdf/work/ICVL\\_Workshop\\_paper04.pdf](http://www.icvl.eu/2012/disc/structura/icvl/documente/pdf/work/ICVL_Workshop_paper04.pdf)
8. Butnariu, S., Gîrbacia, F., Development of a natural user interface for intuitive presentations in educational process, The 8th International Scientific Conference eLearning and software for Education, Bucharest, April 26-27, indexed Web of Knowledge, 2012, [http://www.editurauniversitara.ro/carte/proceedings-36/development\\_of\\_a\\_natural\\_user\\_interface\\_for\\_intuitive\\_presentations\\_in\\_educational\\_process/10771](http://www.editurauniversitara.ro/carte/proceedings-36/development_of_a_natural_user_interface_for_intuitive_presentations_in_educational_process/10771)
9. Butnariu, S., Mogan, Gh., Antonya, Cs., Gîrbacia, F: A new approach to diagnosis and rehabilitation in spine diseases, VRIC 2016, 18th ed. Conference Laval Virtual 23-27 March 2016, ACM, <https://dl.acm.org/citation.cfm?doid=2927929.2927951>
10. Butnariu, S., Antonya, C.: Correction method for spine flexion tracking with markers, Chapter in New Trends in Medical and Service Robots, Vol. 39 of the series Mechanisms and Machine Science pp 265-275, DOI:10.1007/978-3-319-30674-2\_20; .ISBN: 978-3-319-30673-5, [https://link.springer.com/chapter/10.1007/978-3-319-30674-2\\_20](https://link.springer.com/chapter/10.1007/978-3-319-30674-2_20)
11. Butnariu, S., Gîrbacia, F., The command of a virtual industrial robot using a dedicated haptic interface, Advanced Materials Research Vol. 837 pp 543-548, (2014) [www.scientific.net/AMR.837.543](http://www.scientific.net/AMR.837.543) ISSN: 1662-8985.
12. Voinea, D., Butnariu, S., Wearability assessment of an equipment for spine posture monitoring, revista:2017 E-Health and Bioengineering Conference (EHB),issn:978-1-5386-0358-1 <https://ieeexplore.ieee.org/document/7995352/>
13. Antonya, C, Butnariu, S., Beles, H.: Parameter estimation from motion tracking data revista:6th International Conference, DHM 2015, Held as Part of HCI International 2015, Los Angeles, CA, USA, August 2-7, 2015, Proceedings, Part II, issn:978-3-319-21069-8 [https://link.springer.com/chapter/10.1007/978-3-319-21070-4\\_12](https://link.springer.com/chapter/10.1007/978-3-319-21070-4_12)
14. B. Gherman T. Gîrbacia D. Cocorean C. Vaida S. Butnariu N. Plitea D. Talaba D. Pîsla: Virtual Planning of Needle Guidance for a Parallel Robot used in Brachytherapy revista: New Trends in Medical and Service Robots issn:978-3-319-23831-9, An Aparitie: 2015 nrAutori: 8 BDI: Web of Science [https://link.springer.com/chapter/10.1007/978-3-319-23832-6\\_9](https://link.springer.com/chapter/10.1007/978-3-319-23832-6_9)
15. F. Gîrbacia, D. Pîslă, S. Butnariu, B. Gherman, T. Gîrbacia, N. Plitea: An evolutionary computational algorithm for trajectory planning of an innovative parallel robot for brachytherapy revista: New Advances in Mechanisms, Mechanical Transmissions and Robotics, issn:978-3-319-45449-8 An Aparitie: 2016 nrAutori: 6, BDI: Web of Science [https://link.springer.com/chapter/10.1007/978-3-319-45450-4\\_43](https://link.springer.com/chapter/10.1007/978-3-319-45450-4_43)
16. Doina Pîslă, Bogdan Gherman, Florin Gîrbacia, Călin Vaida, Silviu Butnariu, Teodora Gîrbacia, Nicolae Plitea: Optimal Planning of Needle Insertion for Robotic- Assisted Prostate Biopsy revista: Advances in Robot Design and Intelligent Control issn:978-3-319-21289-0, An Aparitie: 2015 nrAutori: 7 BDI: Web of Science [https://link.springer.com/chapter/10.1007/978-3-319-21290-6\\_34](https://link.springer.com/chapter/10.1007/978-3-319-21290-6_34)

**PATENTS**

1. Butnariu S., Butiła E., Talaba D., Sistem haptic pentru simularea funcționării mecanismelor articulate și modul de utilizare a acestuia, RO129033 (A0) — 2013-11-29
2. Butnariu Silviu Luis; Covaleov Anatoli, Portable system for diagnosis and therapy of spine disorders, based on inertial sensors, numar: RO20170000867 20171025, 2018
3. Butnariu S., Sistem de urmărire a mișcării în timp real pentru exerciții de kinetoterapie, și metodă de urmărire, 133122 A0 – 2019-03-30.