

## PERSONAL INFORMATION



## Alexandru Ionut RADU

Str. Politehnicii, Braşov, jud. Braşov,

alexandru.radu@unitbv.ro

## PROFESSIONAL EXPERIENCE

13.12.2023 - Present

Judicial Technical Expert – Motor Vehicles, Road Traffic

25.02.2019 - Present

University Lecturer

Universitatea TRANSILVANIA din Braşov, Braşov

▪ Teacher

01.10.2018 – 24.02.2019

Cadru didactic asociat

Universitatea TRANSILVANIA din Braşov, Braşov

▪ Teacher

13.06.2011 – 1.07.2011

Mecanic Auto

SC TESS VOLSKWAGEN SRL Ghimbav

▪ Internship at the Faculty of Mechanical Engineering

13.06.2011 – 1.07.2011

Mecanic Auto

SC Auto SIMA Bayer SRL Focşani

▪ Internship at the Automotive Transport High School

## EDUCATION AND TRAINING

1.10.2014 – 16.03.2018

PhD Degree

Universitatea TRANSILVANIA din Braşov, Facultatea de Inginerie Mecanica

01.10.2012 – 12.07.2014

Master Degree - Road Safety, Transport, and Environmental Interaction

Universitatea TRANSILVANIA din Braşov, Facultatea de Inginerie Mecanica

15.09.2004 – 10.07.2008

Bachelor's degree - Transport and Traffic Engineering

Universitatea TRANSILVANIA din Braşov, Facultatea de Inginerie Mecanica

- Transport Systems
- Automotive Mechanics
- Traffic Systems
- Design using ProEngineer software
- Traffic Accident Reconstruction

01.10.2008 – 11.07.2012

**Diploma de Bacalaureat - specializarea: Tehnician Mecatronist**

Grup Școlar Transporturi Auto Focșani, Focșani

Desen tehnic

- ☐ Technical Measurements
- ☐ Electrotechnics
- ☐ Automobiles

**PERSONAL SKILLS**

Mother tongue(s) Romana

**Other known foreign languages**

	UNDERSTANDING		TALKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Language Proficiency Certificate					
German	A1	A1	A1	A1	A1

Niveluri: A1/2: Utilizator elementar - B1/2: Utilizator independent - C1/2: Utilizator experimentat  
Cadrul european comun de referință pentru limbi străine

**Communication skills** Very good communication skills acquired through participation in the research team within the Faculty of Mechanical Engineering.

**Organization skills** Good team organizer because of participating in experiments conducted within the faculty alongside student teams.

**Job-related skills**

- ☐ Development of teaching and group management abilities for students in classroom and laboratory settings
- ☐ Writing scientific articles and practical papers
- ☐ Use of online teaching platforms
- ☐ Organization and administration of exams
- ☐ Coordination and completion of diploma projects with students
- ☐ Very good knowledge of virtual design
- ☐ Good knowledge in the field of automotive mechanics

**Digital skills**

- ☐ CAD design software (SolidWorks, Catia V5, Autodesk Inventor, AutoCAD)
- ☐ Good command of mathematical computing programs (MATLAB, Simulink)
- ☐ Good command of multibody simulation software (ADAMS, Simscape Multibody)
- ☐ Good command of FEA software (ANSYS, SolidWorks Simulation)
- ☐ Good command of traffic simulation software (AnyLogic, Synchro 7)
- ☐ Very good command of the accident simulation software PC-CRASH
- ☐ Software maintenance for the Windows operating system
- ☐ IT – Hardware and Software Support
- ☐ Good command of Microsoft Office tools (Word, Excel, PowerPoint)
- ☐ Good command of programming languages: Visual Basic and C++

- Other skills**
- ☐ Intermediate level in automotive mechanics, welding, and mechanical processing
  - ☐ Intermediate level in electrical and electronic engineering
  - ☐ Good overall and spatial vision, with strong orientation skills, specialized in virtual design and technical drawing
  - ☐ Good knowledge in the following fields: Mathematics, Road Traffic Management and Telematics, Machine Elements, Engines, and Technical Drawing

## ADDITIONAL INFORMATION

- Publications**
- Publication of 30 scientific articles indexed in ISI Web of Knowledge and BDI, 18 of which as first author.
- Radu, A. I., Tolea, A. B., Trusca, D. D., Ispas, N., & Nastasoiu, M. (2023). Development of a Multibody Model Used to Study the Impact Between a Vehicle Wheel with a Pothole. *International Journal of Automotive Technology*, 24(5), 1441-1446.
- Radu A. I., Toganel G., Trusca D., 2021, Mathematical model validated by a crash test to be used as kinematic and dynamic study for side impacts, *International Journal of Automotive Technology*, Acceptata spre publicare
- Radu, A. I., Cofaru, C., Tolea, B., & Popescu, M. (2018). Development of a new recline mechanism in order to reduce the "whiplash" effect using a virtual model. *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of automobile engineering*, 232(12), 1701-1712, Factor de impact: 1.253.
- Radu A. I., Corneliu, C., & Bogdan, T. (2017). Mathematical model validated by a crash test for studying the occupant's kinematics and dynamics in a cars' frontal collision. *International Journal of Automotive Technology*, 18(6), 1017-1025, Factor de impact: 0.588.
- Tolea, B., Radu, A. I., Beles, H., & Antonya, C. (2018). Influence of the geometric parameters of the vehicle frontal profile on the pedestrian's head accelerations in case of accidents. *International journal of automotive technology*, 19(1), 85-98, Factor de impact: 0.588.
- Radu, A. I., Trusca, D., & Toganel, G. (2018, November). Influence of tire pressure on the braking distance when driving on snow and asphalt. In *IOP Conference Series: Materials Science and Engineering* (Vol. 444, No. 7, p. 072013). IOP Publishing.
- Radu, A. I., Cofaru, C., Tolea, B., & Popescu, M. (2017, October). Study regarding seat's rigidity during rear end collisions using a MADYMO occupant model. In *IOP Conference Series: Materials Science and Engineering* (Vol. 252, No. 1, p. 012004). IOP Publishing.
- Tolea, B., Tarulescu, S., Trusca, D. D., Toganel, G., & Radu, A. I. (2016, October). The Assessment of the Head Injury of a Pedestrian in Comparison with a Cyclist. In *International Congress of Automotive and Transport Engineering* (pp. 805-811). Springer, Cham.
- RADU, A. I., TRUSCA, D. D., TOGANEL, G., & BENEĂ, B. (2020). STUDY REGARDING THE SIDE IMPACT CONSEQUENCES UPON THE VEHICLE OCCUPANT USING ACCIDENT RECONSTRUCTION SOFTWARE. *Journal of Automotive Engineering*, 41.
- TOLEA, B. A., RADU, I., DIMA, D. S., & BELEȘ, H. (2018). The influence of the suspension upon the axle weight distribution for heavy trucks. *Journal of Automotive Engineering*, 75.
- Radu, A. I., Cofaru, C., Tolea, B., Trusca, D. D., & Toganel, G. (2016, October). Research Regarding the Influence of Vehicle's Safety Restraint Systems on Its Occupants in Case of Rear-End Collision. In *International Congress of Automotive and Transport Engineering* (pp. 798-804). Springer, Cham.

## Publications

Radu, A. I., Trusca, D. D., & Toganel, G. (2020). Prediction Model For Sedan Class Vehicle Braking Distance On A Flat Surface Using Experimental Braking Tests For Different Road Surfaces. *Journal of Automotive Engineering*, 89.

Condrea, O. A., Chiru, A., Togănel, G., Radu, I. A., & Chiriac, R. L. (2020). CYCLIST HEAD TO WINDSHIELD IMPACT ANALYSIS. DEFORMATION AND PERFORATION CASE STUDY. *Journal of Automotive Engineering*, 21.

Manea, L. C., Manea, A., Radu, A. I., & Dima, D. S. (2019, October). Analysis of Occupant Injury Level in the Case of High-Speed Vehicle Slide-Spinning Collision. In *SIAR International Congress of Automotive and Transport Engineering: Science and Management of Automotive and Transportation Engineering* (pp. 312-321). Springer, Cham.

Tolea, B. A., Radu, A. I., Beles, H., Dragomir, G., & Moca, S. (2019, October). Study of a Car-to-Pedestrian Collision in Case of Vehicle's Post-impact Braking. In *SIAR International Congress of Automotive and Transport Engineering: Science and Management of Automotive and Transportation Engineering* (pp. 375-382). Springer, Cham.

Benea, B. C., Trusca, D. D., Togănel, G. R., & Radu, A. I. (2019, October). The Influence of the Color of the Reflective Vest on the Visibility of the Cyclist at Night. In *SIAR International Congress of Automotive and Transport Engineering: Science and Management of Automotive and Transportation Engineering* (pp. 359-365). Springer, Cham.

Togănel, G. R., & Radu, A. I. (2019, October). The Influence of the Color of the Reflective Vest on the Visibility of the Cyclist at Night. In *The 30th SIAR International Congress of Automotive and Transport Engineering: Science and Management of Automotive and Transportation Engineering* (p. 359). Springer Nature.

Radu, A. I., Trusca, D. D., Toganel, G., & Tolea, B. (2019). Efficiency Analysis of Passive Safety Systems in Vehicles in the Case of Frontal Collision Using Experimental Tests. *Journal of Automotive Engineering*, 55.

Bogdan, T., Radu A. I., & Horia, B. (2018, October). The Overlap Influence in Case of a Car-to-Pedestrian Accident. In *International Congress of Automotive and Transport Engineering* (pp. 820-827). Springer, Cham.

Radu, A. I., Cofaru, C., Tolea, B., Trusca, D. D., & Beles, H. (2016, October). Research Regarding Occupant's Movement in the Case of Frontal Collision Using High-Speed Video Recording. In *International Congress of Automotive and Transport Engineering* (pp. 790-797). Springer, Cham.

Tolea, B., Trusca, D. D., Antonya, C., Radu, A. I., & DIMA, D. S. (2016, October). Research Regarding Pedestrian Visibility During Night-Time Using Photo Processing. In *International Congress of Automotive and Transport Engineering* (pp. 881-888). Springer, Cham.

Radu, A. I., & Cofaru, C. (2015). Study of current state of crash testing. *Bulletin of the Transilvania University of Brasov. Engineering Sciences. Series I*, 8(2), 31.

Radu, A. I., & Tolea, B. A. (2020, July). Comparison of passenger vehicle braking distance when travelling on snow and asphalt at different velocities. In *IOP Conference Series: Materials Science and Engineering* (Vol. 898, No. 1, p. 012002). IOP Publishing.

RADU, A. I., Cofaru, C., Tolea, B., TRUSCA, D. D., & Beles, H. (2016). Study Regarding Visibility Geometry in Vehicles' Rear-View Mirrors.

Radu, A. I., Trusca, D. D., Tolea, B. A., & Cofaru, C. (2016). Research Regarding the Effects of Emergency Vehicle Braking upon Its Occupants. In *Proceedings of the European Automotive Congress EAEC-ESFA 2015* (pp. 757-764). Springer, Cham.

## Publications

Radu, A. I., Trusca, D. D., Toganel, G. R., & Benea, B. C. (2020, December). Designing and testing a stand used to simulate the dummy head impact with different surfaces using CAD software. In IOP Conference Series: Materials Science and Engineering (Vol. 997, No. 1, p. 012058). IOP Publishing.

Benea, B. C., Trusca, D. D., Toganel, G. R., & Radu, A. I. (2019, August). Pedestrian visibility at night: the influence of the pedestrian clothing and the defective headlamp of the car. In IOP Conference Series: Materials Science and Engineering (Vol. 568, No. 1, p. 012003). IOP Publishing.

Radu, A. I., Trusca, D. D., Toganel, G. R., & Benea, B. (2019, August). Study regarding the influence of passive safety systems on the occupant in the case of Automatic Emergency Braking System activation. In IOP Conference Series: Materials Science and Engineering (Vol. 568, No. 1, p. 012052). IOP Publishing.

Radu, A. I., Cofaru, C., Tolea, B., & Dima, D. (2018). Study regarding the influence of airbag deployment time on the occupant injury level during a frontal vehicle collision. In MATEC Web of Conferences (Vol. 184, p. 01007). EDP Sciences.

Radu A. I., Corneliu, C., & Bogdan, T. (2017). Influence of Head Restraint Position in case of Rear End Collision and its Effects upon the Whiplash Phenomenon. International Journal of Engineering Research & Technology 6 (09), 154-161.

TRUSCA, D., TOLEA, B., & RADU, I. RESEARCH REGARDING THE SEVERITY OF THE INJURY OF THE PEDESTRIAN'S HEAD WITH THE VEHICLE'S BONNET.

## Publications

**Laboratory Guides:**

RADU Alexandru Ionut, Florea Daniela, Intersection Design – Laboratory Guide, 2023, Transilvania University of Braşov Publishing House, ISBN 978-606-19-1655-9

RADU Alexandru Ionut, GARBACIA Florin Stelian, Applied Informatics – Practical Applications, 2018, Transilvania University of Braşov Publishing House, ISBN 978-606-19-1095

RADU Alexandru Ionut, TOGANEL George, TRUSCA Daniel, Collision Modeling in the Virtual Environment: Laboratory Guide, 2020, Transilvania University of Braşov Publishing House, ISBN 978-606-19-1271-1

**Specialized Volume:**

TOLEA Bogdan Adrian, RADU Alexandru Ionut, Aspects Regarding the Reconstruction of Road Accidents, 2019, University of Oradea Publishing House, ISBN 978-606-10-2029-4