DZMITRY TSETSERUKOU

Skoltech, Bolshoy Boulevard 30, bld. 1, Moscow, 121205, Russia
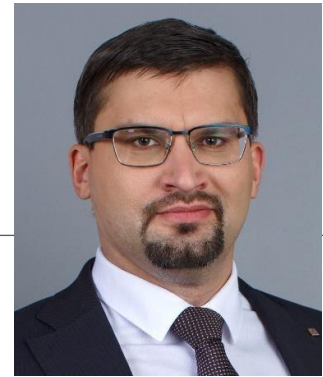**Email: d.tsetserukou@skoltech.ru; Phone: +7-910-484-59-37**
Scopus H-index: 17 (118 papers, 1009 citations), IEEE Member
4 PhD, 72 M.Sc. graduated students
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Keywords: Autonomous Robots, Swarm of Drones, Haptics, Computer Vision, Deep Learning, AI

PROFESSIONAL CAREER

01 MARCH 2019 – PRESENT
ASSOCIATE PROFESSOR, SKOLTECH
Head of Intelligent Space Robotics, VR/AR Laboratory

26 AUGUST 2014– 28 FEB. 2019
ASSISTANT PROFESSOR, SKOLTECH
Head of Intelligent Space Robotics Laboratory

15 FEB. 2010– 25 AUG. 2014
ASSISTANT PROFESSOR, TOYOHASHI UNIVERSITY OF TECHNOLOGY
HEAD OF ROBOTICS AND VR LABORATORY

01 OCT. 2009– 14 FEB. 2010
RESEARCHER, THE UNIVERSITY OF TOKYO, TACHI LABORATORY
HAPTICS, ROBOTICS, VR

01 OCT. 2007– 30 SEPT. 2009
JSPS POSTDOCTORAL FELLOW, THE UNIVERSITY OF TOKYO, TACHI LABORATORY
ROBOTICS, HAPTICS, VR

EDUCATION

SEPT. 2007
PHD, THE UNIVERSITY OF TOKYO
PHD IN INFORMATION SCIENCE AND TECHNOLOGY, DEPARTMENT OF INFORMATION PHYSICS AND COMPUTING, GRADUATE SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY

NOV. 2002
M.Sc., NATIONAL ACADEMY OF SCIENCES OF BELARUS
M.Sc. in Mechanical Engineering, Institute of Mechanics and Reliability of Machines

AUG. 1999
B.Sc., BELARUSIAN-RUSSIAN UNIVERSITY
B.Sc. with Honors in Electrical Engineering, Department of Electrical Engineering

TEACHING EXPERIENCE

- Lecture course "Robotics", Skolkovo Institute of Science and Technology, Russia, Master/PhD level, 8 completed courses, 2015-2022. Language: English. Role: Author/Lecturer.
- Lecture course "Control Systems Engineering", Skolkovo Institute of Science and Technology, Russia, Master/PhD level, 8 completed courses, 2015-2023. Language: English. Role: Author/Lecturer.
- Lecture course "VR, AR and Haptics", Skolkovo Institute of Science and Technology, Russia, Master/PhD level, 3 completed courses, 2020-2023. Language: English. Role: Author/Lecturer.
- Lecture course "Control Systems Engineering", Toyohashi University of Technology, Japan, Bachelor level, 1 completed course, 2012. Language: English/Japanese. Role: co-author/Lecturer.
- Lecture course "Intelligent Robotics", Toyohashi University of Technology, Japan, Master level, 1 completed course, 2012. Language: English/Japanese. Role: Author/Lecturer.

AWARDS (29)

- **Excellence Recognition Award** by Skoltech, April 21, 2023.
- **Finalist** of Best Paper Award at the IEEE International Conference on Robotics and Biomimetics (Robio 2022), Xishuangbanna, China, December 6, 2022.
- **Best Paper Award** at the International Conference Asia Haptics 2022, Beijing, China, November 14, 2022.
- **Best Student Paper Award – Runners Up** at IEEE International Conference on Systems, Man, and Cybernetics (SMC 2022), Prague, Czech Republic, October 12, 2022.
- **Excellence Recognition Award** by Skoltech, September 1, 2022.
- **Best Career Trainer of The Year** Award by Skoltech, June 25, 2022.
- **Bronze Prize** by M.Sc. student Alena Savinykh. All-Russian Yandex Olympiad "I am professional", Computer Science (Robotics). June 2, 2022.
- **Outstanding Reviewer**, PhD Student Daria Trinitatova, IEEE Haptics Symposium 2022, Santa Barbara, USA, March 24, 2022.
- **Finalist** of Franklin V. Taylor Memorial Award (IEEE SMC 2021), Melbourne, Australia, 17-20 Oct., 2021.
- **Winners** of the first Drone Team Games, team SpiceDrones Skoltech (out of 69 teams), MIPT, Moscow, Russia, 16-19 April, 2021.
- **Best Demonstration Award**. SwarmCloak. Int. Conf. on Computer Graphics and Interactive Technologies (ACM SIGGRAPH Asia 2019), Emerging Technologies, Brisbane, Australia, Nov. 17-20, 2019.
- **Finalist** of self-driving car competition Winter City (5 teams out of 33). MADI-Skoltech team. Dec. 10 2019.
- **Winners** of Aramco Upstream Solutions Technathon, CrazyLoc Team (out of 25 teams), Dec. 15, 2019.
- **6th times Champions of Russia Eurobot. Competition on Autonomous Robots**, reSET team Skoltech, head of the team. 2022, 2020-2021, 2019, 2018, 2017, 2016.
- **Vice-champions of Eurobot World**. reSET team Skoltech, head of the team. La Roche-sur-Yon, France, May 30 – June 1, 2019.
- **Best Demonstration Award**, Bronze Prize, LinkGlide. Int. Conf. AsiaHaptics 2018, Incheon, South Korea, Nov. 14-16, 2018.
- **Best Poster Award**, 1st Skoltech-MIT International Conference Shaping the Future: Big Data, Biomedicine and Frontier Technologies, Moscow, Russia, April 25-26, 2017.

- **Laval Virtual Award** for the Best Innovation and Demonstration, Int. Conf. on Computer Graphics and Interactive Technologies (ACM Siggraph 2016), Anaheim, USA, July 28, 2016
- **Best Student Presentation Award**, Asia-Pacific Interdisciplinary Research Conference (AP-IRC 2013), Tahara-city, Japan, October 24-25, 2013.
- **Best Paper Award.** First ACM International Conference Augmented Human, Megeve, France, April 3, 2010.
- **Young Author's Award and International Award (Finalist),** International Conference on Instrumentation, Control and Information Technology (SICE 2008), Tokyo, Japan, August 20-22, 2008.
- **Postdoctoral Fellow, Japan Society for the Promotion of Science (JSPS),** 2007-2009, (17.7% award acceptance rate).
- **Japanese Government (Monbukagakusho: MEXT) Fellow**, 2004-2007, (16.7% award acceptance rate).
- **Best Paper Award**, Conference of Young Scientists of the National Academy of Science of Belarus, Minsk, October 28-30, 2003.

INVITED LECTURES (16)

1. D. Tsetserukou. Robots with AI for Smart Cities. Conference on Robotization of Industrial Enterprises, Moscow, Russia, 4 April, 2023. Link: https://leader-id.ru/events/408097

2. D. Tsetserukou. Advanced Education in Robotics, Expert Council of the Project of the Government of Moscow "Moscow Technical School" in the Field of "Robotics and sensors", Moscow, Russia, 4 April, 2023. Link: https://leader-id.ru/events/408109

3. D. Tsetserukou. Autonomous Robots with AI Technologies. International Automobile Scientific Forum (MANF 2022), NAMI, Moscow, Russia, 19 October, 2022.
Link: https://www.iasf.nami.ru/program/

4. D. Tsetserukou. Trends in Self-Driving Car Technologies. International Exhibition MIMS Automobility**,** Expocenter, Moscow, Russia, August 22, 2022.

5. D. Tsetserukou. Deep Learning for Mobile Robots and Self-Driving Cars. Keynote speech at the international Conference on Nonlinearity, Information and Robotics (NIR 2022), Innopolis, Russia, 24 August, 2022.

6. D. Tsetserukou. Cutting Edge Robotics for Digitalization of the Energy, Oil and Gas Industry. National Oil and Gas Forum. Expocenter, Moscow, Russia, 19-21 April 2022.

7. D. Tsetserukou. How Smart Robots Concur the World. Workshop of VEB.RF. Technopark Skolkovo, Moscow, Russia, Nov. 18, 2022.

8. D. Tsetserukou. Metaverse with Haptics and AI. Machine Learning and Artificial Intelligence Technologies Workshop, Sirius, Sochi, Russia, Nov. 22-28, 2021.

9. D. Tsetserukou. Trend and Technologies of Logistics Robot for Railways Transport Industry. Russian Railways Conference on Industry Automation, Moscow, Russia, Nov. 23, 2021.

10. D. Tsetserukou. Roboverse: Metaverse for Robots with AI. Skolkovo Conference on Novel AI Technologies (Skolkovo AI 2021), Technopark Skolkovo, Moscow, Russia, 9-10 November, 2021.

11. D. Tsetserukou. Recybot: High-Speed Intelligent Robotic System for Electronics Recycling. Department of Mechanical Engineering (MechE), Massachusetts Institute of Technology (MIT), Cambridge, MA, USA, December 5, 2018.

12. D. Tsetserukou. SwarmTouch: Tactile Interaction of Human with Impedance Controlled Swarm of Nano-Quadrotors. Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology (MIT), Cambridge, MA, USA, December 3, 2018.
Link: https://www.csail.mit.edu/event/swarmtouch-tactile-interaction-human-impedance-controlled-swarm-nano-quadrotors

13. D. Tsetserukou. OS:Car Platform. Datasets and Algorithms for Self-driving Car Research. The 5th International Professor's day on ICT Algorithm Design ICTAD-2018, Moscow, Russia, Nov. 28-29, 2018.

14. D. Tsetserukou. World Trend in Industry 4.0 for Aviation Industry. D. Tsetserukou. GidroAvia Salon, Gelendzhik, Russia, Sept. 7, 2018.
15. D. Tsetserukou. How to Feel and Conquer the Swarm of Drones with Computer Vision, Yandex Conference: Data&Science: The World by Robots' Eyes, Moscow Russia, August 18, 2018.
Link: https://www.youtube.com/watch?v=XMQRZU9X-zI
16. D. Tsetserukou. Flying, Mobile, and Wearable Collaborative Robots for Industry Revolution. University of Electro-Communications (UEC), Chofu, Japan, July 7, 2017.

GRADUATED PHD STUDENTS (4)

1. Dr. Yuri Sarkisov
Title: Design, Modeling, and Control of Cable-suspended Aerial Manipulator (Grade: A)
Supervisor: Associate Professor Dzmitry Tsetserukou
Co-Advisors: Dr. Konstantin Kondak, German Aerospace Center (DLR), Germany, Dr. Christian Ott, German Aerospace Center (DLR), Germany
Link 1: https://www.skoltech.ru/en/education/phd-defenses/2022-2/yuri-sarkisov/
Link 2: https://elib.dlr.de/185366/
Current position: Leading Engineer in Control Systems of Self-Driving Cars, SberAutotech, Moscow, Russia.

2. Dr. Evgeny Tsykunov
Title: Human-Swarm Interaction for the Guidance and Deployment of Drones using Impedance Control and Tactile Feedback (Grade: B)
Supervisor: Associate Professor Dzmitry Tsetserukou
Grade: **B**
Link: https://www.skoltech.ru/en/education/phd-defenses/2021-2/evgeny-tsykunov/
Current position: Team Leader in DNN, Intel, Munich, Germany.

3. Dr. Ivan Kalinov
Title: Development of a Heterogeneous Robotic System for Automated Inventory Stocktaking of Industrial warehouse
Supervisor: Associate Professor Dzmitry Tsetserukou
Grade: A
Link: https://www.skoltech.ru/en/education/phd-defenses/2020-2/ivan-kalinov/
Current position: Head of Logistics Robotics Department, Yandex, Moscow, Russia.

4. Dr. Grigoriy Yashin
Title: Development of Group of Flying Robots with Multifunctional Robotic Limbs aimed at Operations in Cluttered Environments (Grade: A)
Supervisor: Associate Professor Dzmitry Tsetserukou
Link: https://www.skoltech.ru/en/education/phd-defenses/2020-2/grigory-yashin/
Current position: Head of Robotics Department, Saudi Aramco Rus (Aramco Innovations), Moscow Russia.

CURRENTLY SUPERVISED PHD STUDENTS (12)

- **Wearable 3D haptic Display with Hand Tracking to Achieve Immersive Virtual Reality-based Teleoperation.** Daria Trinitatova. Expected PhD Defense is scheduled on March 2023. Pre-defense successfully passed with A grade.
- **Development of Robotic Teleoperation System with Haptic Feedback for Dexterous and Safe Object Manipulation in Remote Environment.** Miguel Altamirano Cabrera. Expected PhD Defense is scheduled on February 2023. Pre-defense successfully passed with A grade.

- **Development of Autonomous Robot with CNN-Based Frame Quality Assessment for Mobile Robot with Omnidirectional Visual SLAM**, Pavel Karpyshev. Expected PhD Defense is scheduled on April 2023. Pre-defense successfully passed with A grade.
- **Neural Field for Optimal Motion Planner of Differential-drive Robots with Nonholonomic Constraints.** Mikhail Kurenkov. Expected PhD Defense is scheduled on Nov. 2023.
- **Design, Modeling, and Control of Autonomous Two-Wheeled Robot.** Alexander Petrovskii. Expected PhD Defense is scheduled on Nov. 2023.
- **Robotic System with CNN for Autonomous Charging of Electric Vehicles.** Viktor Rakhmatulin. Expected PhD Defense is scheduled on Nov. 2023.
- **An In-Office Hysteroscopy VR/Haptic Simulation Platform for Training in Spatial Navigation and Passage of the Cervical Canal.** Vladimir Poliakov, Double PhD program with KU Leuven (Academic Advisor from KU Leuven is Associate Professor Emmanuel Vander Poorten). Expected PhD Defense is scheduled on Nov. 2023.
- **Heterogeneous Multi-Agent System with Quadruped Robot and Swarm of Drones for Shared Navigation in Dynamic and Cluttered Environments**. Aleksey Fedoseev. Expected PhD Defense is scheduled on Nov. 2024.
- **Multi-limb UAV with Deep Reinforcement Learning for Aerial-Ground Manipulation and Rough-Terrain Locomotion under Environmental Uncertainty**. Mikhail Martynov. Expected PhD Defense is scheduled on Nov. 2026.
- **Multi-Robot Collaborative Behavioral Planning for Social Navigation**. Stepan Perminov. Expected PhD Defense is scheduled on Nov. 2026.
- **DNN-based Simultaneous Localization and Mapping of Self-Driving Vehicles.** Mohamed Sayed. Expected PhD Defense is scheduled on Nov. 2026.
- **Dense Monocular SLAM with Neural Radiance Fields for Self-Driving Cars.** Yaroslav Solomentsev Expected PhD Defense is scheduled on Nov. 2026..