

# Andrey Belogaev, PhD in Wireless Communications

## Postdoctoral Researcher @ IDLab, UAntwerpen-imec

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### PROFESSIONAL PROFILE

- Hands-on experience of research in the area of wireless networks. Analytical and simulation modeling of modern wireless communication systems (5G-NR, B5G, Wi-Fi) at PHY, MAC and higher layers (IP, TCP/UDP/QUIC, real applications).
- Developed novel algorithms for cutting-edge wireless technologies and services, including Wi-Fi 7, 5G-NR, URLLC, V2X, massive MIMO. Defended PhD on QoS provisioning methods for intelligent transportation systems. Prepared and published **10+ articles** in scientific journals (including Q1) and proceedings of respected scientific conferences.
- (Co-)developed and taught **3 new practical courses** for BS and MS students on network modeling and probability theory. Supervised 2 MS students, and currently (co-)supervising 2 PhD students.
- Designed and implemented user QoE enhancing solutions for cellular and local area wireless networks in **5+ different industrial projects**. Three of the projects achieved Huawei Best Cooperation Project awards.

### WORK EXPERIENCE

- **Postdoctoral Researcher** **IDLab @ UAntwerpen-imec**  
2022 – pres. (<https://www.uantwerpen.be/en/research-groups/idlab/>)  
Conducting research in 5 projects with different industrial and research partners. Published 3 papers in proceedings of international conferences (IEEE WCNC, EuCNC, CrystalFreelot), and several more are currently accepted, submitted or being prepared.  
Co-supervision of 2 PhD students on topics “Scalable low-latency communication in dense robot swarm” and “Deterministic wireless networks in unpredictable industrial environments”.  
Teaching practical sessions for course “Computer Networks” for BS students. Improved and developed the lab descriptions, developed new NS-3 lab for modeling wireless networks. Developed a GUI tool to visualize packet transmissions in IPMininet (forked from MiniNAM).
- **Senior Researcher** **Wireless Networks Lab @ IITP RAS**  
2014 – 2022 (<http://wireless.iitp.ru/>)  
Early positions: Research Assistant, Junior Researcher, Researcher  
Published 10+ works in scientific journals and conference proceedings.

Developed novel mathematical and simulation models, solutions and algorithms in 5+ different industrial projects, 3 of which are awarded by industrial partner.

Supervised 2 MS students on topics “Transmission parameters selection for uplink grant-free access in 5G systems” and “Energy-efficient offloading of computing tasks in intelligent transportation systems”.

- **Senior Lecturer** **Higher School of Economics**  
2019 – 2019 (<https://www.hse.ru/>)  
Practical classes on Probability Theory for 2nd year BS students
- **Lecturer** **Moscow Institute of Physics and Technology** (<https://mipt.ru/>)  
2018 – pres. **Moscow State University** (<https://www.msu.ru/>)  
Has developed 2 new practical courses “Network Modeling Basics” and “Modeling of Modern Networks”. Developed labs for modeling queuing systems, ALOHA, CSMA, Wi-Fi DCF, OLSR, etc., with NS-3 simulation tool.
- **Intern** **Computer Vision Lab @ IITP RAS**  
2013 - 2014 (<http://iitp.ru/en/researchlabs/281.htm>)  
Has developed fast algorithm for detection of orthotropic edge detection.

## EDUCATION

- **PhD student** **Moscow Institute of Physics and Technology**  
2016 – 2020 (<https://mipt.ru/>)  
Specialization: Telecommunication systems, networks and devices  
Thesis: Research and Development of Quality of Service Provisioning Methods in Intelligent Transportation Systems Networks.  
Supervisor: Artem Krasilov ([Scopus AuthorID](#), [ResearcherID](#), [Google Scholar](#))
- **Master student** **Moscow Institute of Physics and Technology**  
2014 – 2016 (<https://mipt.ru/>)  
MS in Applied Physics and Mathematics  
Thesis: Analysis of the Algorithms for Reservations Information Dissemination in Wi-Fi Mesh Networks.  
Supervisor: Artem Krasilov ([Scopus AuthorID](#), [ResearcherID](#), [Google Scholar](#))
- **Bachelor student** **Moscow Institute of Physics and Technology**  
2010 – 2014 (<https://mipt.ru/>)  
BS in Applied Physics and Mathematics. Graduated with honors.  
Thesis: Orthotropic Edge Detection Algorithm and its Application to Automatic Transport Classification in Video Stream  
Supervisor: Dmitry Nikolaev ([Scopus AuthorID](#), [ResearcherID](#), [Google Scholar](#))

## LIST OF MAIN PUBLICATIONS

1. **A. Belogaev**, X. Shen, C. Pan, X. Jiang, C. Blondia, and J. Famaey, "Dedicated Restricted Target Wake Time for Real-Time Applications in Wi-Fi 7" // *in Proc. of IEEE WCNC 2024, Dubai, UAE*, <https://arxiv.org/abs/2402.15900>. (presented)
2. A. Shashin, **A. Belogaev**, A. Krasilov, and E. Khorov, "Adaptive Parameters Selection for Uplink Grant-Free URLLC Transmission in 5G Systems" // *Computer Networks*, vol. 222, p. 109527, 2023, doi: [10.1016/j.comnet.2022.109527](https://doi.org/10.1016/j.comnet.2022.109527).
3. **A. Belogaev**, A. Elokhin, A. Krasilov, E. Khorov and I. F. Akyildiz, "Cost-Effective V2X Task Offloading in MEC-Assisted Intelligent Transportation Systems" // *IEEE Access*, vol. 8, pp. 169010-169023, 2020, doi: [10.1109/ACCESS.2020.3023263](https://doi.org/10.1109/ACCESS.2020.3023263).
4. **A. Belogaev**, E. Khorov, A. Krasilov, D. Shmelkin, and S. Tang, "Conservative Link Adaptation for Ultra Reliable Low Latency Communications" // *in Proc. of IEEE BlackSeaCom 2019, Sochi, Russia*, doi: [10.1109/BlackSeaCom.2019.8812824](https://doi.org/10.1109/BlackSeaCom.2019.8812824).
5. **A. Belogaev**, A. Krasilov, A. Lyakhov, E. Khorov, "Analysis of the Differential Update Method for Control Information Dissemination in Wireless Networks" // *Journal of Communications Technology and Electronics*, vol. 63, no. 12, pp. 1538–1544, 2018, doi: [10.1134/S1064226918120033](https://doi.org/10.1134/S1064226918120033).