


University	Peter the Great St.Petersburg Polytechnic University
Level of English proficiency	Advanced (C1)
Educational program and field of the educational program for which the applicant will be accepted	ECONOMY & ECONOMETRICS 5.2.2. Mathematical, Statistical, and Instrumental Methods in Economics 5.2.3. Regional and Sectoral Economy
List of research projects of the potential supervisor (participation/leadership)	<ul style="list-style-type: none"> • Spatial and temporal modelling of socio – economic systems • Regional industrial specialization and diversity • Effectiveness of investments in higher education • Spatial development of territories based on smart city technologies and intelligent transport systems • Digital model of the Russian Federation regional innovation system as a factor of sustainable development • Inclusive cross-border cooperation between Russia and Finland • Economics and innovation management
List of the topics offered for the prospective scientific research	<ul style="list-style-type: none"> • Econometric modeling of urban, industrial, and regional development • Application of machine learning methods for analysis and modeling of socio-economic processes and phenomena • Geospatial analysis and modelling of urban agglomerations.
 <p>Research supervisor: Angi E. Skhvediani PhD/Candidate of economic sciences (Peter the Great St. Petersburg Polytechnic University)</p>	1.01. Mathematics
	Supervisor's research interests My scientific interests revolve around analysis and modelling of various socio-economic processes and systems using mathematical, statistical, and instrumental methods. Specifically, I use econometric analysis, machine learning, geospatial analysis, and simulation modeling techniques. I use these methods to model and analyze dynamics and patterns of regional, urban, and industrial development.
	Research highlights Econometric modeling, machine learning, economic growth, regional development, geospatial modeling, urban development.
	Supervisor's specific requirements: Basic knowledge of statistics, mathematics or programming.
	Supervisor's main publications <ul style="list-style-type: none"> • Skhvediani A., Koklina A., Kudryavtseva T., Maksimenko D. The Impact of Intellectual Capital on the Firm Performance of Russian Manufacturing Companies. <i>Risks</i> 2023, 11, 76. https://doi.org/10.3390/risks11040076 • Kudryavtseva T. Yu., Skhvediani A. E., Rodionova M. A., Iakovleva V. V. Identification of Russian Clusters Based on the Synthesis of Functional and Spatial Approaches (in Russian). <i>Russian Journal of Regional Studies</i>. 2023,31(1):46–69. https://doi.org/10.15507/2413-1407.122.031.202301.046-069 • Pechkurov I., Plotnikov D., Gorev A., Kudryavtseva T., Banite A., Skhvediani A. Development of a Method for Selecting Bus Rapid Transit Corridors Based on the Economically Viable Passenger Flow Criterion. <i>Sustainability</i> 2023, 15, 2391. https://doi.org/10.3390/su15032391

- Skhvediani A., Maksimenko D., Maykova A., Kudryavtseva T. Assessment of the Impact of Intellectual Capital on the Profitability of IT Companies in Russia. *International Journal of Technology*. 2022. Volume 13(7), pp. 1558-1567. <https://doi.org/10.14716/ijtech.v13i7.6203>
- Gutman S., Rytova E., Brazovskaia V., Skhvediani A. The Impact of Firms' Activities on Regional Sustainable Development. *International Journal of Technology*. 2022. Volume 13(7), pp. 1505-1511. <https://doi.org/10.14716/ijtech.v13i7.6195>
- Skhvediani A., Sosnovskikh S., Kudryavtseva T., Nalwanga S. Modelling of a Regional Industry Specialisation: The Impact of Agglomeration Effects on Labour Productivity. *International Journal of Trade and Global Markets*, 2023 (in press). <https://doi.org/10.1504/IJTGM.2022.10047538>
- Rodionova M., Skhvediani A. and Kudryavtseva T. ESG as a Booster for Logistics Stock Returns—Evidence from the US Stock Market. *Sustainability*. 2022, 14(19), 12356; <https://doi.org/10.3390/su141912356>
- Rodionova M., Skhvediani A. and Kudryavtseva T. Prediction of Crash Severity as a Way of Road Safety Improvement: The Case of Saint Petersburg, Russia. *Sustainability* 2022, 14(16), 9840; <https://doi.org/10.3390/su14169840>
- Skhvediani A., Sosnovskikh S., Rudskaia I., & Kudryavtseva, T. Identification and comparative analysis of the skills structure of the data analyst profession in Russia. *Journal of Education for Business*, 2022, 97:5, pp. 295-304. <https://doi.org/10.1080/08832323.2021.1937018>
- Kudryavtseva T., Shneider A., Skhvediani A., Brazovskaya V. Comparative Analysis of Waste Management and Pollution Elimination Clustering in Russia and Finland. *Ecology and Industry of Russia*. 2022;26(3):65-71. (In Russ.) <https://doi.org/10.18412/1816-0395-2022-3-65-71>
- Rudskaya I., Kryzhko D., Shvediani A., Missler-Behr M. Regional Open Innovation Systems in a Transition Economy: A Two-Stage DEA Model to Estimate Effectiveness. *Journal of Open Innovation Technology, Market and Complexity*, 2022, 8, 41. <https://doi.org/10.3390/joitmc8010041>
- Rodionova M., Skhvediani A., Kudryavtseva T. Determinants of Pedestrian–Vehicle Crash Severity: Case of Saint Petersburg, Russia. *International Journal of Technology*, 2021, 12(7), pp. 1427-1436. <https://doi.org/10.14716/ijtech.v12i7.5403>
- Koroleva E., Shawuya J., Anqi M., and Skhvediani A. Determinants Affecting Profitability of State-Owned Commercial Banks: Case Study of China. *Risks*, 2021, 9, no. 8: 150. <https://doi.org/10.3390/risks9080150>
- Kudryavtseva T., Skhvediani A., Iakovleva V., Cherkas A. Algorithm for Defining Clusters based on Input–Output Tables: Case of Construction Cluster of Russia. *International Journal of Technology*, 2021, 12(7), pp. 1442-1449. <https://doi.org/10.14716/ijtech.v12i7.5354>
- Skhvediani A., Sosnovskikh S. What Agglomeration Externalities Impact the Development of the Hi-tech Industry Sector? Evidence from the Russian Regions *International Journal*

	<p>of Technology, 2020, 11(6), pp. 1091–1102. https://doi.org/10.14716/ijtech.v11i6.4423</p> <ul style="list-style-type: none"> • Kudryavtseva T., Skhvediani A. Effectiveness Assessment of Investments in Robotic Biological Plant Protection. International Journal of Technology, 2020, 11(8), pp. 1589–1597. https://doi.org/10.14716/ijtech.v11i8.4528 • Kudryavtseva T., Skhvediani A. Studying Regional Clusters with the Use of Data Processing Systems: The Case of the Biopharmaceutical Cluster (in Russian). Regionology = Russian Journal of Regional Studies. 2020; 28(1):48-79. https://doi.org/10.15507/2413-1407.110.028.202001.048-079 • Kudryavtseva T., Kulagina N., Lysenko A., Berawi M.A., Skhvediani A. Developing Methods to Assess and Monitor Cluster Structures: The Case of Digital Clusters. International Journal of Technology, 2020, 11(4), pp. 667–676. https://doi.org/10.14716/ijtech.v11i4.4191 • Kudryavtseva T.J., Skhvediani A.E. Modelling of cluster development using programming methods: case of Russian arctic regions for 2009 – 2016. Entrepreneurship and Sustainability Issues 8(1): 150-176. https://doi.org/10.9770/jesi.2020.8.1(10). <ul style="list-style-type: none"> • Bolsunovskaya M.V., Gintsyak A.M., Rudskaya I.A., Skhvediani A.E. The program for forecasting the innovative development of the regions of the Russian Federation based on artificial intelligence technologies. Certificate of state registration of the computer program No. 2023619524. Date of state registration in the register of computer programs: 05/12/2023 • Skhvediani A.E., Rodionov D.G., Kudryavtseva T.Yu. A computer program for comparing empirical distribution of localization quotient of regional clusters and industries with normal, lognormal and uniform distributions. Certificate of state registration of the computer program No. 2022684926. Date of state registration in the register of computer programs: 12/19/2022 • Cherkas A.V., Skhvediani A.E. A program for identifying clusters of industries in the regional economy of the Russian Federation. Certificate of state registration of the computer program No. 2021680459. Date of state registration in the register of computer programs: 12/10/2021. • Rodionov D.G., Kudryavtseva T.Yu., Skhvediani A.E. Polytech-Invest. Certificate of state registration of the computer program No. 2021614355. Date of state registration in the register of computer programs: March 23, 2021. • Rodionov D.G., Kudryavtseva T.Yu., Skhvediani A.E. Program for econometric analysis and modeling of regional industrial specialization. Certificate of state registration of the computer program No. 2019665637. Date of state registration in the register of computer programs: November 27, 2019.
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