	KOVALCHUK, Sergey V. PhD
Research interests	✓ Complex systems modelling and simulation ✓ Human-AI interaction ✓ Human behavior and decision making modelling ✓ Cognitive modelling
List of the supervisor's research projects (participation/supervision)	✓ Intelligent technologies for decision support based on modeling and control of human-AI interaction
List of potential thesis topics	✓ Modeling human decision making in context of AI support in complex domains ✓ Modeling distributed intelligent systems in complex domains (healthcare, law, education) ✓ Modeling and structuring complex domain-specific textual data corpora ✓ Modeling human cognitive and intelligent characteristics in complex tasks of control, reasoning, and decision making
Publications in the last five years	Scopus: 74 Web of Science: 48 RSCI: 73
Key publications	1. X. Fu, V. Krzhizhanovskaya, A. Yakovlev, S. Kovalchuk Modelling Diversity in Hospital Strategies in City-Scale Ambulance Dispatching with Coupled Game-Theoretic Model and Discrete-Event Simulation // Journal of Biomedical Informatics, 2025, Vol. 162, pp. 104777 2. S.V. Kovalchuk, G.D. Kopanitsa, I.V. Derevitskii, G.A. Matveev, D.A. Savitskaya Three-stage intelligent support of clinical decision making for higher trust, validity, and explainability // Journal of Biomedical Informatics, Vol. 127, 2022, pp. 104013 3. S. Kovalchuk, V. Lomshakov, A. Aliev Human perceiving behavior modeling in evaluation of code generation models // Proceedings of the 2nd Workshop on Natural Language Generation, Evaluation, and Metrics (GEM), 2022, pp. 287-294 4. A. Funkner, M. Egorov, S. Fokin, G. Orlov, S. Kovalchuk Citywide quality of health information system through text mining of electronic health records // Applied Network Science, Vol. 6, 2021, pp. 53 5. E.V. Bolgova, S.V. Kovalchuk, M.A. Balakhontceva, N.E. Zvartau, O.G. Metsker Human Computer Interaction During Clinical Decision Support With Electronic Health Records Improvement // International Journal of E-Health and Medical Communications, Vol. 11, Issue 1, 2020, pp. 93-106

Key IPs	✓ Patent WO/2025/081750 “Method and Apparatus for Programming», Kovalchuk S.V., Aliev A., Lomshakov V., Hu K. (Publication Date 24.04.2025; International Application No. PCT/CN2024/089328; International Filing Date 23.04.2024) ✓ ProFIT library for process mining (https://github.com/itmo-escience/ProFIT): Software registration №2020667030 "Library for Process Mining with Identification, Interpretation and Structuring of Meta-States (ProFIT)", Elkhovskaya L.O., Kshenin A.D., Balakhontseva M.A., Kovalchuk S.V.
Code of the subject area of the PhD program	1.2.1 Artificial Intelligence and Machine Learning 1.2.2 Mathematical Modeling, Numerical Methods and Software Systems