

# Bobokandov Makhmud

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## ⌚ Summary

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|------------------------|---|
| <b>Award</b>           | ■ Winner of the Government scholarship named after Biruni   |
| <b>Work experience</b> | ■ <b>6+ years</b> of experience as a Senior Lecturer in the Education and Research field;   |
| <b>Education</b>       | ■ <b>B.Sc., M.Sc.</b> in Applied Mathematics and Information Technologies with an excellent GPA.<br>■ <b>Ph.D.</b> in Applied Mathematics (05.01.07 - Mathematical modeling. Numerical methods and software).   |
| <b>Research</b>        | ■ Main research interests are the mathematical modelling of nonlinear physical processes, including analysing the qualitative features of differential equation solutions, developing self-similar solutions, and conducting research. Furthermore, I am interested the Data Analysis.  |
| <b>Teaching</b>        | ■ Teaching experience in Mathematical modelling, Calculus, Database Management Systems, Introduction to Programming, Introduction to LaTeX, and Skills for Applied Mathematics subjects at the <b>National University of Uzbekistan named after Mirzo Ulugbek</b> .<br>Also, have experience in Numerical methods, modelling, and programming in MATLAB, Programming in Python subjects at the <b>Tashkent State Transport University</b> . |

## 💼 Employment

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| 2025 – now  | ■ <b>Researcher&amp; Senior Lecturer @ NUUz</b> – Department of Applied Mathematics and Computer Analysis, National University of Uzbekistan named after Mirzo Ulugbek (NUUz), Tashkent, Uzbekistan. |
| 2024 – 2025 | ■ <b>Senior Lecturer @ TSTU</b> – Department of Information Systems and Technologies in Transport, Tashkent State Transport University (TSTU), Tashkent, Uzbekistan.                                 |
| 2022 – 2024 | ■ <b>PhD student @ NUUz</b> – Department of Applied Mathematics and Computer Analysis, National University of Uzbekistan named after Mirzo Ulugbek (NUUz), Tashkent, Uzbekistan.                     |
| 2023 – 2024 | ■ <b>Senior Lecturer @ TUSI</b> – Department of Economics and Digital Technologies, Tashkent University of Social Innovations (TUSI), Tashkent, Uzbekistan.  |
| 2020 – 2023 | ■ <b>Teacher Assistant @ NUUz</b> – Department of Applied Mathematics and Computer Analysis, National University of Uzbekistan named after Mirzo Ulugbek (NUUz), Tashkent, Uzbekistan.               |
| 2019 – 2020 | ■ <b>Math Teacher @ School</b> – 125th Public School, Tashkent, Uzbekistan.  |

## Education

- 2022 – 2024 ■ **Ph.D., National University of Uzbekistan named after Mirzo Ulugbek, Uzbekistan** in Mathematical Simulations and Numerical Methods.  
Thesis title: *Mathematical modelling of diffusion processes represented by parabolic equations and systems of non-divergent form*
- 2018 – 2020 ■ **M.Sc., National University of Uzbekistan named after Mirzo Ulugbek, Uzbekistan** in Applied Mathematics and Information Technologies.
- 2014 – 2018 ■ **B.Sc., Tashkent Institute of railway engineering, Uzbekistan** in Informatics and Information Technologies.

## Awards and Achievements

- 2025-2027 ■ **National Grant**, as a senior researcher at the project "Mathematical modelling of processes described by nonlinear, divergent and non-divergent parabolic equations and systems", Republican fundamental grant ID: **AL-9224104601** with approximately 1.64 bln. Uzbek sum.
- 2017-2020 ■ **Fundamental Grant**, as a junior researcher at the project "Investigation of the qualitative properties of a double nonlinear cross system under the influence of source, convective displacement, variable density, source or absorption" Republican fundamental grant ID: **OTF-4-30** with 65 mln. Uzbek sum.
- 2018-2020 ■ **Scholarship Award**, for full master studies with a monthly stipend at "National University of Uzbekistan named after Mirzo Ulugbek", Uzbekistan.
- 2016 ■ **Scholarship Award**, Winner of "Uzbekistan Railways" JSC scholarship competition, Uzbekistan.

## Certification

- 2024 ■ Data Analysis Using Python, Issued by IBM Skills Build. April 2024, USA.  
■ Python for Data Science, Issued by IBM Skills Build. April 2024, USA.  
■ Data Fundamentals, Issued by IBM Skills Build. April 2024, USA.  
■ Python Core, a course of study offered by EPAM. March 2024, USA.
- 2023 ■ Intro to Machine Learning, a course of study offered by Kaggle. July 2023, USA.  
■ Pandas, a course of study offered by Kaggle. July 2023, USA.  
■ Introduction to L<sup>A</sup>T<sub>E</sub>X, a course of study offered by HSE University. Coursera, February 2023, USA.
- 2022 ■ 6.00.1X Introduction to Computer Science and Programming Using Python, a course of study offered by MITx, an online learning initiative of the Massachusetts Institute of Technology. EdX, October 2022, USA.  
■ 6.431X: Probability - The Science of Uncertainty and Data a course of study offered by MITx, an online learning initiative of the Massachusetts Institute of Technology. EdX, June 2022, USA.
- 2017 ■ **Winner of Olympiad**, 1st-degree diploma for taking first place in the subject Olympiad of students of the Republic of Uzbekistan in higher mathematics, Tashkent Institute of Railway Engineering, Uzbekistan.
- 2016 ■ **Certificate of the 3rd place**. Olympiad in Higher Mathematics, Tashkent Institute of Railway Engineering, Uzbekistan.

## ★ Skills

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|--------------------|--|
| Languages          | Uzbek as a native, writing and speaking competencies for English(B1).                              |
| ML & Data Analysis | Pandas, Matplotlib, Simulink ...   |
| Coding:            | C#, Python, MATLAB.  |
| Technologies       | Core C#&Python, .NET Framework, MVC (ASP MVC), OOP, ...  |
| Databases          | SQL, MS Access.  |
| Web Dev            | HTML, CSS, Django.   |
| Misc.              | Academic research, teaching, training, L <sup>A</sup> T <sub>E</sub> X typesetting and publishing. |

## 🔗 Reviewer

- **zbMATH Open** (Zentralblatt MATH)
- **Mathematics and Statistics** (ISSN: 2332-2071; 2332-2144).
- **Applied and Computational Mathematics** (ISSN: 2328-5605; 2328-5613).
- **IEEE International Conference on Actual Problems of Electronic Instrument Engineering (APEIE)**

## 💻 Research Publications

### Journal Articles

- 1 Mukhamadiyev, A., Urunbaev, J., Rakhmonov, Z., Khujakulov, T., & **Bobokandov, M.** (2026). Self-similar analysis of the solutions to the cross-diffusion system. *Mathematics*, *14*, 83. doi:10.3390/math14010083
- 2 Aripov, M., & **Bobokandov, M.** (2025a). Cauchy problem for the double nonlinear parabolic equation not in divergent form with a time-dependent source or absorption. *Carpathian Mathematical Publications*, *17*, 693–705. doi:10.15330/cmp.17.2.693–705
- 3 Aripov, M., & **Bobokandov, M.** (2025b). The cauchy problem for a double nonlinear time-dependent parabolic equation with absorption in a non-homogeneous medium. *Carpathian Mathematical Publications*, *17*, 277–291. doi:10.15330/cmp.17.1.277–291
- 4 Aripov, M., Mamatkulova, M., & **Bobokandov, M.** (2025). Analysis of a double nonlinear diffusion equation in inhomogeneous medium. *Journal of Mathematical Sciences (United States)*, *289*, 657–669. doi:10.1007/s10958-024-07384-7
- 5 Aripov, M., & **Bobokandov, M.** (2024a). Analysis of a double nonlinear parabolic equation with a source in an inhomogeneous medium. *Proceedings of the Institute of Mathematics and Mechanics*, *50*, 285–306. doi:10.30546/2409-4994.2024.50.2.285
- 6 Aripov, M., & **Bobokandov, M.** (2023). The cauchy problem for a doubly nonlinear parabolic equation with variable density and nonlinear time-dependent absorption. *Journal of Mathematical Sciences (United States)*, *277*, 355–365. doi:10.1007/S10958-023-06840-0
- 7 **Bobokandov, M.** (2023). Global solutions for double nonlinear parabolic crosswise-diffusion systems with time-dependent nonlinearity absorption. *Acta NUUz*, *1*, 226–235. doi:10.13140/RG.2.2.36212.87683
- 8 Aripov, M., & **Bobokandov, M.** (2022). Blow-up analysis for a doubly nonlinear parabolic non-divergence form equation with source term. *Bulletin of the Institute of Mathematics*, *5*, 7–21. Retrieved from doi:<http://mib.mathinst.uz>

## In Proceedings

- 1 Bobokandov, M., Uralov, N. et al. (2023). Investigation of the doubly nonlinear parabolic equation. (Vol. 13, pp. 339–346). doi:10.25673/120454
- 2 Aripov, M., Uralov, N., & Bobokandov, M. (2024, June). Analysis of double nonlinear parabolic crosswise-diffusion systems with time-dependent nonlinearity absorption. (Vol. 1, p. 060006). Toronto Metropolitan University. Retrieved from <https://journals.library.torontomu.ca/index.php/ictea/article/view/2257>
- 3 Aripov, M., & Bobokandov, M. (2024b, March). Asymptotic behavior of solutions for a doubly nonlinear parabolic non-divergence form equation with density. (Vol. 3004, p. 060006). doi:10.1063/5.0199587
- 4 Aripov, M., Mamatkulova, M., & Bobokandov, M. (2024, February). To numerical solution of the non-divergent diffusion equation in non-homogeneous medium with source or absorption. (Vol. 3085, p. 020024). doi:10.1063/5.0194632
- 5 M.Aripov, F., M.Sayfullayeva, & Bobokandov, M. (2024, February). About one exact solution to the nonlinear problem of a biological population with absorption in a heterogeneous medium. (Vol. 3085, p. 020031). doi:10.1063/5.0194751
- 6 Aripov, M., Matyakubov, A., & Bobokandov, M. (2023). Cauchy problem for the heat dissipation equation in non-homogeneous medium. (Vol. 2781, p. 020027). doi:10.1063/5.0144807
- 7 Aripov, M., Matyakubov, A., Khasanov, J., & Bobokandov, M. (2021). Mathematical modelling of the double nonlinear problem of reaction-diffusion in not divergent form with a source and variable density. (Vol. 2131, p. 032043). doi:10.1088/1742-6596/2131/3/032043

**Primary MSC:** 35C06, 35D30, 35K55, 35K59, 35K57, 35K05.

## ✈ Trainings and seminars abroad

- 2025 ━ The scientific seminar, Bahçeşehir University, Turkiye, on enhancing and applying numerical schemes to visualise the parabolic p-Laplacian and its crosswise system.

## 🔗 References

### Mersaid Aripov

Professor, Department of Applied Mathematics and Computer Analysis

National University of Uzbekistan named after Mirzo Ulugbek (Tashkent, Uzbekistan)

**Relation:** PhD supervisor

✉ mirsaidaripov@mail.ru

### Zafar Rakmonov

Dean of the Faculty of Applied Mathematics and Intellectual Technologies

National University of Uzbekistan named after Mirzo Ulugbek (Tashkent, Uzbekistan)

**Relation:** Employer

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