

Curriculum Vitae
Bülent Kokluce, PhD, Mathematics
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Barrington, Rhode Island, USA

Education

- **PhD**, Mathematics, Yıldız Technical University, Istanbul-Turkey (2005),
- **MS**, Mathematics, Fatih University, Istanbul-Turkey (2000),
- **BS**, Mathematics Education, Karadeniz Technical University, Trabzon-Turkey(1996)

Employment Experience

University of Massachusetts Dartmouth, Dartmouth, MA, USA, Assistant Teaching Professor of Mathematics, September 2025-

Community College of Rhode Island, Warwick, RI, USA, Visiting Professor of Mathematics for the 2023Fall Semester, 2024 Fall & Spring Semesters, Adjunct Faculty 2025 Spring-

Johnson & Wales University, Providence, RI, USA, Adjunct Faculty (May 2024- September 2025)

Brown University, Providence, USA, Senior Research Associate, ICERM- Institute for Computational and Experimental Research in Mathematics (One-year grant-funded position until Sept 2022).

Safir Int. College, Head of Math Department and Calculus Instructor (Sept 2019-Sept 2021),

IVY Exclusive, AP Calculus AB and BC Instructor (Remote) (October 2019-August 2021).

Universal Counselor, AP Calculus AB and BC Tutor (February 2017-June 2019),

Fatih University, İstanbul,

Associate Tenured Professor of Mathematics (2013-2016 June)

Assistant Professor of Mathematics (2006-2013),

Lecturer (2001-2006),

Research Assistant (1998-2001).

Administrative Experience

2019-2021 Head of Math Department, Safir Int. College

2014-2016 Deputy Head of Elementary Mathematics Education, Fatih University.

Research Interests and Experience

- **Mathematics**: Solving practical and abstract problems with a focus on Number Theory, including Modular Forms, Theta Series, Convolution Sums of Divisor Functions, Quadratic Forms, Representation by Quadratic Forms, and Quadratic Number Fields.
- **Data Science and Optimization**: Expertise in data analysis, big data analytics, and machine learning, with experience in Python, SQL, and tools for data visualization and model tuning. Proficient in applying machine learning models, ensemble learning, deep learning, time series analysis, and business domain applications.
- **Analytical and Numerical Methods**: Employing advanced techniques for solving mathematical and computational problems.

- **Programming:** Skilled in a range of programming tools, including Python, Maple, MATLAB, Pari/GP, R and SQL.

Teaching Interests and Experience: I enjoy teaching undergraduate-level mathematics and have experience teaching at the graduate, MS, and PhD levels, all in English. I am comfortable and experienced in teaching most undergraduate mathematics and statistics classes(see experience in teaching below). I have developed and implemented innovative teaching strategies to improve retention and engagement among diverse student populations, including students from over 70 countries at Fatih University where I spent 20 years. I have collaborated with faculty to design tailored interventions for at-risk students, integrated active learning techniques, and created an inclusive classroom environment that consistently resulted in improved student outcomes.

Certificates and Training:

- **HarvardX (CS109xa)**, Certificate in Machine Learning and AI with Python February 2025
- **HarvardX (CS109xa)**, Completed Introduction to Data Science with Python March 2025
- Google Data Analytics Certificate (3 months training-May 2022),
- DataScience Bootcamp (9 months training and Project- Finished in January 2023)
- Online Teaching Readiness (February 2024)
- Effective Practices in Teaching Online(April 2024)

Selected Publications

(Articles published in Science Citation Index, Science Citation Index Expanded journals will be shown with *)

Academic Journals

1. *Bülent KÖKLÜCE, "**Representations by sexenary quadratic forms with coefficients 1, 2, 5 and 10**", Submitted to a Journal, Apr 2022, <https://doi.org/10.48550/arXiv.2207.05638>.
2. *Bülent KÖKLÜCE, "**Evaluation of certain convolution sums involving the sum of divisor function**", The Ramanujan Journal, volume 60, pages 533–549 (2023), doi.org/10.1007/s11139-022-00632-x, October 2022.
3. *Bülent KÖKLÜCE, "**Representations by quaternary quadratic forms with coefficients 1, 2, 11 and 22**", Bull. Korean Math. Soc. 60 (2023), No. 1, pp. 237-255.
4. Bülent KÖKLÜCE, "**Evaluation of Four Convolution Sums and Representation of Integers by Certain Quadratic Forms in twelve Variables**", Journal of Mathematical and Computational Science, doi.org/10.28919/jmcs/7016, 2022.
5. *Bülent KÖKLÜCE, "**Representations by octonary quadratic forms with coefficients 1, 2, 5 and 10**", **Proceedings - Mathematical Sciences (Springer Nature)**, June 2022. <https://doi.org/10.1007/s12044-022-00700-8>
6. *Bülent KÖKLÜCE, "**Evaluations of the convolution sums $W_{1,42}(n)$, $W_{2,21}(n)$, $W_{6,7}(n)$ and $W_{3,14}(n)$** ", Submitted to a Journal, Dec. 2021, <https://doi.org/10.48550/arXiv.2207.09516>.
7. *Bülent KÖKLÜCE, Hasan ESER, "**Evaluation of some convolution sums and representation of integers by certain quadratic forms in 12 variables**", International Journal of Number Theory, Vol. 13, No.03, Nov. 2017, pp. 775-799.
8. *Bülent KÖKLÜCE, İbrahim KARATAY, "**Theta Function Identities and Representation Numbers of Certain Quadratic Forms in Twelve Variables**", Miskolc Mathematical Notes, Vol:18(2017), No.2, 889-904.

9. Bülent KÖKLÜCE, **Representation Numbers by Sums of Squares and the Forms $x_1^2 + x_1x_2 + x_2^2$** , Integers Journal, #A62, Vol. 17(2017), pp.1-19.
10. *Bülent KÖKLÜCE, Müberra Gürel, **Representation of numbers by sums of quadratic forms $x_1^2 + x_1x_2 + x_2^2$ in sixteen variables**, Miskolc Mathematical Notes, Vol:18(2017), No.1, 277-283.DOI: 10.18514/MMN.2017.1955
11. *Bülent KÖKLÜCE, **"Cusp forms in $S_6(\Gamma_0(23))$, $S_8(\Gamma_0(23))$ and the number of representation of numbers by some quadratic forms in 12 and 16 variables "**, Ramanujan Journal, DOI: 10.1007/s11139-013-9480-4, Vol. 34, No. 2, Jun. 2014, pp. 187-208.
12. *Bülent KÖKLÜCE ve Nesibe TÜFEKÇİ, **"Characterization of $V(\mathbb{Z}C_n^+)$ of rank $z \leq 4$ "**, Miskolc Mathematical Notes, Vol. 15(2014), No. 2, Jan. 2015, pp. 571-584.
13. Bülent KÖKLÜCE, **"Representation Number formulae for some octonary quadratic forms"**, Communications Series A1 Mathematics and Statistics. c63, 2(2014), 135-145.doi:10.1501/Commua1_0000000719
14. *Bülent KÖKLÜCE, **"The representation numbers of certain octonary quadratic forms"**, International Journal of Number Theory, Vol. 9, No. 5, Aug. 2013, pp. 1125-1139.
15. *Bülent KÖKLÜCE, **"Representation numbers of two octonary quadratic forms"**, International Journal of Number Theory- DOI: 10.1142/S1793042113500486, Vol. 9, No. 7, Nov. 2013, pp. 1641-1648.
16. *Bülent KÖKLÜCE, **"The Representation numbers of three octonary quadratic forms"**, International Journal of Number Theory, Vol. 9, No. 2, Mar. 2013, pp. 505-516.
17. Bülent KÖKLÜCE, **"Representation number formulae for some mixed quadratic forms"**, European Journal of Pure and Applied Mathematics, Vol. 7, No. 3, Jul. 2014, pp. 304-311.
18. Bülent KÖKLÜCE, **"On the Number of Representation of Integers by the Direct Sum of BQFs with Discriminant -191"**, European Journal of Pure and Applied Mathematics, Vol. 5-, No. 4, Nov. 2012, pp. 451-468.
19. *İ. Karatay, Ş. R. Bayramoğlu, B. Yildiz, B. Köklüce, **"Matrix stability of the difference schemes for nonlocal boundary value problems for parabolic differential equations"**, International Journal of Physical Sciences, Vol. 6, No. 4, Feb. 2011, pp. 819-827.
20. Bülent KÖKLÜCE and İsmail Gökhan KELEBEK, **"A Different Characterization of $U_1(\mathbb{Z}C_n)$ and $U_1(\mathbb{Z}C_9)$ "**, International Journal of Algebra, Vol. 2,2008, No. 15, Nov. 2008, pp. 701-706. 21. *İ. ABU-ALSHAIKH and Bülent KÖKLÜCE, **"One-Dimensional Transient Dynamic Response in Functionally Graded Layered Media"**, Journal of Engineering Mathematics, Vol. 54, No. 1, Jan. 2006, pp. 17-30.
22. Bülent KÖKLÜCE, İbrahim ABU-ALSHAIKH, Tuğba YILDIZ , **"Numerical Solution of Wave Equation in Multilayered Functionally Graded Materials"**, Journal of Engineering and Natural Sciences-Sigma, Vol. 2005, No. 4, Dec. 2005, pp. 31-40.
23. Bülent KÖKLÜCE, Ercan Şenişçi, **Formulae for the representation numbers of octonary quadratic forms which are sums of squares and the forms $x_1^2 + x_1x_2 + x_2^2$** , Submitted.
24. *Bülent KÖKLÜCE, **Construction of a Basis of $M_6(\Gamma_0(12))$ and an Application**, in Review.

Conference and Seminar Talks

1. **"Theta products and eta quotients of weight 2 level 88 and the number of representations of positive integers by some quaternary quadratic forms"**, Algebra Seminars, Brown University, Providence, Rhode Island, Mar. 2022.
2. **"Representations by Quaternary Quadratic Forms with Coefficients 1, 2, 11 and 22"**, Simons Collaboration on Arithmetic Geometry, Number Theory and Computation Monthly Meeting, MIT,

Boston, Feb. 2022 (Virtual).

3. **"Construction of Basis of the Space of Modular Forms $M_6(\Gamma_0(12))$ and an application"**, 2nd International Conference on Pure and Applied Sciences, Istanbul, Jun 2016.
4. **"Representation Number Formulae for Some Octonary Quadratic Forms "**, Algerian Turkish International days on Mathematics 2013, Istanbul/Turkey, Sep. 2013 Atim 2013 Abstract Book, pp. 111.
5. **"On the Number of Representation of Positive Integers by Some Octonary Quadratic Forms"**, 2nd International Eurasian Conference on Mathematical Sciences and Applications (IECMSA-2013)-, Sarajevo, Bosnia, and Herzegovina, Aug. 2013 2nd International Eurasian Conference on Mathematical Sciences and Applications (IECMSA-2013)-Proceeding Book, pp. 382
6. Nesibe TÜFEKÇİ, Bülent KÖKLÜCE, **"Characterization of $U_1(\mathbb{Z}Cn^+)$ for $n \leq 15$ "**, International Conference on Applied Analysis and Algebra, Istanbul-TURKEY, Jun. 2012 Proceedings of International conference on Applied Analysis and Algebra.
7. **"Field Extensions "**, Fatih University, Algebra and Number Theory Seminar Series, Apr. 2008. 8. **"Factorization in Polynomial Rings"**, Fatih University Algebra and Number Theory Seminar Series, Istanbul-Turkey, Dec. 2007.
9. **"Quadratic Number Fields"**, Fatih University Algebra and Number Theory Seminar Series, Istanbul-Turkey, Dec. 2000.

Other Workshops and Conferences Attended

1. Geometric and Topological Methods in Data Science, ICERM, Brown University, Dec 16th-17th, 2021 <https://icerm.brown.edu/tripods/tri-21-gtmds/> ,
2. Simons Foundations Number Theory and Computation Monthly Meetings, 2021-2022, MIT, Boston, USA.

Book Chapters (Translation into Turkish)

1. **Thomas Calculus, George B. Thomas, Maurice D. Weir, Joel R. Hass**, Editor: M. Bayram, Team: B.Kokluce and others, Thomas Calculus I, Pearson 12/2011.
2. **Thomas Calculus, George B. Thomas, Maurice D. Weir, Joel R. Hass**, Editor: M. Bayram, Team: B.Kokluce and others, Thomas Calculus I, Pearson 12/2011.

Thesis Supervised

MS students supervised

1. Ayhan Çaputlu, **"Class Number of Quadratic Number Fields"**, Fatih University, Mar. 2010
2. Nesibe Tüfekçi, **"Characterization of $U_1(\mathbb{Z}Cn^+)$ of $n \leq 24$ "**, Fatih University, May. 2012.
3. Ercan Şenişçi, **"Formulae for the representation numbers of octonary quadratic forms which are sums of squares and the forms $x_1^2 + x_1x_2 + x_2^2$ "**, Fatih University, July 2016

Ph.D Students Supervised

4. Hasan ESER, "Evaluations of some convolution sums and their application on quadratic forms", was interrupted since the university is closed. An article is published from our works.

Editorial Experience

- Reviewer, International Journal of Number Theory
- Reviewer, Bulletin of Korean Mathematical Society
- Reviewer, European Journal of Pure and Applied Mathematics
- Reviewer, MathSciNet
- Reviewer, International Journal of Physical Sciences

Teaching Activities (Courses I Taught)

University of Massachusetts Dartmouth,

- College Algebra, MTH 148
- Intro & Intermediate Algebra, MTH 100
- Fundamentals of Statistics, MTH 147
- Calculus II, MTH 152

Community College of Rhode Island (2023 September -)

- College Algebra, Math 1200 (Taught 7 times)
- Math Emporium, Math 099, (Taught 4 times)
- Statistics for Health and Social Sciences, Math 1175 (Taught two times)
- Mathematics for Liberal Art Students, Math 1139 (Taught two times)

Johnson and Wales University (2024 May-2025 Sept)

- Fundamentals of Algebra, Math 1020 (Taught twice)

Brown University (2022 Spring)

- Intermediate Calculus, MATH 0200- Conference Session (once at Brown University)

Safir International College (2019-2021)

- Calculus I (Taught 4 times)
- Calculus II (Taught 4 times)

Fatih University (from 2000 to 2016)

- "Calculus I", Math 113, Credit:4 (Taught 12 Times)
- "Calculus II", Math 114, Credit:4 (Taught 18 Times)
- "Abstract Mathematics", Math 121, Credit: 4 (Taught 18 Times)
- "Number Theory I", Math 315 Or Math 225, Credit:3 (Taught 10 Times)
- "Number Theory II" Math 316 Or Math 226, Credit:3 (Taught 10 Times)
- "Number Theory ", Math 505 (Online For MS and PhD Students), Credit:3 (Taught 5 Times)
- "Selected Topics in Number Theory", Math 607 (For PhD Students), Credit:4 (Taught Once)
- "Discrete Mathematics", Math 110, Credit:3, (Taught 12 Times)
- "Basic Calculus for Social and Data Sciences I", Math 105, Credit:3, (Taught 3 Times)
- "Basic Calculus for Social and Data Sciences II", (Math 106, Credit:3, (Taught 3 Times)
- "Abstract Algebra I", Math 331, Credit:3 (Taught 5 Times)
- " Abstract Algebra II", Math 332, Credit:3 (Taught 5 Times)
- " Analytic Geometry", Math 140, Credit:3 (Taught 4 Times)
- "Introduction to Theory of L-Functions", Math 430, Credit:3 (Taught 3 Times)
- "Complex Calculus I", Math 204, Credit:3 (Taught Once)
- "Multi-Variable Calculus, Math 214, Credit:4 (Taught Once)
- "Introduction to Mathematics I", Math 103, Credit:3 (Taught Once)
- "Calculus for Social and Data Sciences I And II", Math 103-104 (Taught 3 Times Each)
- "Basic Computer Sciences I", Info 101, Credit:2 (Taught 5 Times)
- "Basic Computer Sciences II", Info 102, Credit:2 (Taught 5 Times)
- "The Use of Information Technology", Info 101, Credit:2 (Taught 5 Times)

Universal Counselor and IVY Exclusive (between 2017 and 2020)

- SAT Mathematics (Tutored to many students)
- AP Calculus AB (Tutored to many students)
- AP Calculus BC (Tutored to many students most of which earned scholarships from universities in the USA or Europe)

- Tutored many students with their Number Theory, Discrete Mathematics, Abstract Algebra, and Differential Equations courses