

# Ahmet Çevik

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## Education

- 2014 Ph.D in Mathematics, University of Leeds, United Kingdom.  
Thesis: *Degrees of members of  $\Pi_1^0$  classes.*  
Advisor: S. Barry Cooper, Andrew E. M. Lewis.
- 2009 M.Sc. in Computer Engineering, Atılım University, Ankara, Turkey.  
Thesis: *State Change Languages: Algebraic and Language Class Properties.*  
Advisor: Hüreveren Kılıç.
- 2007 B.Sc. in Computer Engineering, Atılım University, Ankara, Turkey.  
Thesis: *Collective Behavior Intelligence and Optimization.*  
Advisor: Nergiz Ercil Çağiltay.

## Interest Areas

Pure and applied logic, computability, foundations and philosophy of mathematics, quantum computing, formal languages.

## Languages

Turkish (native), English (fluent), Russian (intermediate).

## Academic Experience

- Research visit July - Sep 2019 & May 2021  
**UCLA, Department of Philosophy/Mathematics, Los Angeles, CA, USA**
- Assoc. Prof. December 2020 - Present  
**Gendarmerie and Coast Guard Academy, Ankara, Turkey**
- Asst. Prof. January 2018 - December 2020  
**Gendarmerie and Coast Guard Academy, Ankara, Turkey**
- Adjunct February 2019 - June 2019  
**Middle East Technical University, Department of Computer Engineering, Turkey**
- Adjunct Fall 2018, Fall 2021, Spring 2023  
**Middle East Technical University, Department of Mathematics, Ankara, Turkey**
- Adjunct February 2015 - Fall 2019  
**Middle East Technical University, Department of Philosophy, Turkey**
- Postdoc 2015 - 2016  
**UC Berkeley, Department of Mathematics, Berkeley, CA, USA**
- Research and Teaching Assistant 2007 - 2010  
**Atılım University, Department of Computer Engineering, Turkey**

## Administrative Experience

2022 - Present	Senate member of the Gendarmerie and Coast Guard Academy.
2021 - Present	Faculty management member of the Gendarmerie and Coast Guard Academy.
2023	Organising committee member of a national conference at the Gendarmerie and Coast Guard Academy.
2023	Vice Chair in the department at the Gendarmerie and Coast Guard Academy.

## Teaching

### Middle East Technical University, Department of Mathematics

#### Lecturer

Teaching duties included preparing the syllabus and some lecture notes; lecturing, assigning and grading homework; writing and grading exams; and holding weekly office hours.

- *Taught courses:* MATH 406 Introduction to Mathematical Logic and Model Theory  
MATH 493 Philosophy of Mathematics  
MATH 432 Computability Theory

### Middle East Technical University, Department of Computer Engineering

#### Lecturer

Teaching duties included preparing the syllabus and lecture notes; lecturing, assigning and grading homework; writing and grading exams; and holding weekly office hours.

- *Taught courses:* CENG 798 Quantum Computing

### Middle East Technical University, Department of Philosophy

#### Lecturer

Teaching duties included preparing the syllabus and lecture notes; lecturing, assigning and grading homework; writing and grading exams; and holding weekly office hours.

- *Taught courses:* PHIL 402 Philosophy of Logic and Mathematics  
PHIL 301 Modern Logic II (Axiomatic Set Theory)

### Gendarmerie and Coast Guard Academy

#### Lecturer

Teaching duties included preparing the syllabus and lecture notes; lecturing, assigning and grading homework; writing and grading exams; and holding weekly office hours.

- *Taught courses:* Matematik (in Turkish): Single variable calculus topics  
Soyut Matematik (in Turkish): Abstract Mathematics  
Mantık (in Turkish): Symbolic Logic

### Atılım University, Department of Computer Engineering

#### Teaching and Research Assistant

Holding weekly tutorials, writing and grading worksheets; holding office hours.

- *Assisted courses:* Artificial Intelligence  
Formal Language Theory  
Algorithms  
Computer Programming in C  
Digital Logic  
Computer Architecture

# Research

## Books

- 1 A. Çevik  
*50 Soruda Paradokslar* (in Turkish), Bilim ve Gelecek Yayınları, İstanbul, 2023.
- 2 A. Çevik  
*Philosophy of Mathematics: Classic and Contemporary Studies*, CRC Press/Taylor and Francis, 2021.
- 3 A. Çevik  
*Kuantum Hesaplama Kuramı* (in Turkish), Middle East Technical University (METU) Press, 2021.
- 4 A. Çevik  
*Matematik Felsefesi ve Matematiksel Mantık* (in Turkish), Nesin Yayınevi, 2019.

## Work in progress/in review

- (i) A. Çevik  
*'Almost All' Theory of Moore's Paradox*, in review
- (ii) H. Kılıç, A. Çevik  
*Majority Characterization of Frequency Emulated 1-D Cellular Automata via Logical Semantics*, in review.
- (iii) A. Çevik  
*Minimal bounds and members of effectively closed sets*, in review.
- (iv) A. Çevik  
*Descriptive classification of logical identities by analytic complexity*, in review.
- (v) A. Çevik  
*Raw Objects and the Axiom of Choice*, in review.

## Refereed Journal Publications

- 1 A. Çevik  
*Hierarchical Multiverse of Sets*, Notre Dame Journal of Formal Logic, *to appear*.
- 2 A. Çevik, Z. Seskir  
*On the Cardinality of Future Worldlines in Discrete Spacetime Structures*, Foundations of Physics, 53:61 (2023).
- 3 A. Çevik, S. Topal  
*Most-Intersection of Countable Sets*, Journal of Applied Non-Classical Logics, 31(3-4), pp. 343-354 (2021).
- 4 A. Çevik  
*An effectively closed set with no join property*, DOI 10.1002/malq.202000063, Mathematical Logic Quarterly, 67(3), pp. 313-320 (2021).
- 5 A. Çevik  
*Palindromic characteristic of committed graphs and some model theoretic properties*, DOI: 10.1142/S0129054120500203, International J. Foundations of Computer Science, Vol. 31(4), pp. 483-498 (2020).
- 6 S. Topal, A. Çevik, F. Smarandache  
*A New Group Decision Making Method with Distributed Indeterminacy Form under Neutrosophic Environment: Neutrosophic Social Choice Theory*, DOI: 10.1109/ACCESS.2020.2976872, IEEE Access, Vol. 8, pp. 42000-42009 (2020).
- 7 S. Topal, A. Çevik  
*Natural Density and the Quantifier “Most”*, Journal of Logic, Language and Information, **29**(4), pp. 511-523, DOI 10.1007/s10849-019-09312-4 (2020).
- 8 A. Çevik  
 *$\omega$ -circularity of Yablo’s paradox*, DOI: 10.12775/lfp.2019.032, Logic and Logical Philosophy, **20**(3), pp. 325-333 (2020).
- 9 A. Çevik  
*Axiom of Neutrosophic Choice*, International Journal of Unconventional Computing, Vol. 14, pp. 467-478 (2019).
- 10 A. Çevik, S. Topal, F. Smarandache  
*Neutrosophic Logic Based Quantum Computing*, DOI: 10.3390/sym10110656, Symmetry, 10(11), 656 (2018).
- 11 A. Çevik, S. Topal, F. Smarandache  
*Neutrosophic Computability and Enumeration*, DOI: 10.3390/10110643, Symmetry, 10, 643 (2018).
- 12 A. Çevik  
*Hypercomputation and Non-Computable Functions*, Journal of Logic, Mathematics, and Linguistics in Applied Sciences, 2(1), pp. 1-14 (2017)
- 13 A. Çevik  
 $\Pi_1^0$  choice classes, DOI 10.1002/malq201500055, Mathematical Logic Quarterly, Vol. 62, No 6, pp. 563-574 (2016).
- 14 A. Çevik  
*Antibasis theorems for  $\Pi_1^0$  classes and the jump hierarchy*, DOI 10.1007/s00153-012-0310-y, Archive for Mathematical Logic, Vol. 52, Issue 1-2, pp. 137-142, Springer, (2013).
- 15 A. Çevik  
*On the possibility of supertasks*, Beytulhikme - An International Journal of Philosophy, Vol.5, pp. 171-180 (2013).
- 16 A. Çevik  
*Philosophy of Hilbert’s Formalization Program*, Felsefe Dünyası, Vol. 60, pp. 265-280 (2014). (Philosopher’s Index)
- 17 H. Koyuncu and A. Çevik  
*Indoor Localization by using Particle Filtering Approach with Wireless Sensor Nodes*, JCOMSS - Journal of Communications Software and Systems, Vol.9, No.1, pp. 74-83 (2013).

## Refereed Journal Publications (Turkish)

- 1 A. Çevik  
*Matematik Felsefesi* (Book review), Kutadgubilig, Vol. 42, pp. 187-191 (2020)
- 2 A. Çevik  
*Aksiyomlanabilir Teorilerin Tam Tutarlı Uzantılarının Hesaplanabilirlik Dereceleri*, DOI: 10.191113/sdufbed.18471, Süleyman Demirel University Journal of Natural and Applied Sciences, Volume 22, Special Issue, pp. 270-276 (2018).
- 3 A. Çevik  
*Seçim Aksiyomu'nun doğallığının veya yapaylığının belirlenmesi üzerine*, Felsefe Tartışmaları, Boğaziçi Üniversitesi Yayınevi, No 53, pp. 1-23 (2017).
- 4 A. Çevik and Z. Ercan  
*Nedir Bu 'Modern' Matematik?*, Bilim ve Gelecek, No 154, pp. 71-81 (2016).
- 5 A. Çevik  
*Matematik Felsefesi: Mantıkçılık*, Matematik Dünyası, No 104, pp. 50-53 (2016).
- 6 A. Çevik  
*Matematik Felsefesi: Sezgicilik*, Matematik Dünyası, No 103, pp. 53-58 (2016).
- 7 A. Çevik  
*Matematik Felsefesi: Platonculuk*, Matematik Dünyası, No 102, pp. 51-55 (2015).
- 8 A. Çevik  
*19. ve 20. yüzyıl bilinebilirliğinin matematiğe yansımaları*, Bilim ve Ütopya, No 253, pp. 62-65 (2015).
- 9 A. Çevik  
*Kardinaller, Modeller ve Skolem Paradoksu*, Matematik Dünyası, No 101, pp. 81-84. (2014).
- 10 A. Çevik  
*Sonluötesi hesaplama*, Matematik Dünyası, No 95, pp. 69-72 (2013).
- 11 A. Çevik  
*Hesaplanabilirlik Kuramı ve Turing Derecelerine Giriş*, Gaziosmanpaşa Üniversitesi Bilimsel Araştırma Dergisi, Vol. 1, pp. 1-20 (2012).
- 12 A. Çevik  
*Saylamaz sonsuzluk, karar verilemezlik, Gödel'in Eksiklik Teoremi*, Felsefe Dünyası, Vol. 53, pp. 253-270 (2011).

## International Conference Publications

- 1 A. Çevik and H. Kılıç  
*An Infinite Proper Subset of Regular Languages as a State Change Based Coupling of Finite Automata*, International Conference on Computer Science and Applications 2015 (ICCSA 2015), San Francisco, USA, October 2015, Conference proceedings, Vol I, pp. 55-58 (2015).
- 2 A. Çevik  
*Is the Church-Turing thesis the new Pythagoreanism?*, 5th World Congress and School on Universal Logic, University of Istanbul, June 25-30 2015, Turkey, Conference proceedings, pp. 85-86 (2015).
- 3 A. Çevik  
*A Linear-time algorithm for the prediction of compression during multimedia transmissions*, International Conference on Theoretical and Mathematical Foundations of Computer Science (TMFCS 2009), Orlando, FL, USA, July 2009, Proc. of TMFCS-09, pp. 49-53 (2009)
- 4 A. Çevik  
*Cryptology in quantum computing*, International Conference on Theoretical and Mathematical Foundations of Computer Science (TMFCS 2009), Orlando, FL, USA, July 2009, Proc. of TMFCS-09, pp. 54-58 (2009)
- 5 İ. K. Öcal, A. Çevik, İ. Cereci and H. Kılıç  
*F-Actor: A multiagent gaming environment for controlling virtual flow networks*, The 13th International Games Conference, (CGAMES 2008), Wolverhampton, UK, Nov. 2008, Proc. of 13th International Games Conference, pp. 86-91 (2008).

## National Conference Publications

- 1 A. Çevik  
*Seçim Aksiyomu Doğal mıdır Yapay mıdır?*, VII. Mantık Çalıştayı, Bildiriler Kitabı, s. 1652-175, On Dokuz Mayıs Üniversitesi, Samsun, 28-30 June 2017.
- 2 A. Çevik  
*Church-Turing Tezi'ndeki ifadesel tamlık ve hipotezin alternatifleri*, V. Mantık Çalıştayı, Bildiriler Kitabı, s. 241-244, Uludağ Üniversitesi, Bursa, 15-17 May 2015.
- 3 A. Çevik  
*Hesaplanabilirlik kuramı nedir?*, XXVI. Ulusal Matematik Sempozyumu 2013, Diyarbakır, Bildiri özetleri kitabı, pp. 50 (2013).
- 4 İ. K. Öcal, A. Çevik, İ. Cereci, H. Kılıç  
*Sanal Akış Ağı Ortamında Kontrol Amaçlı Çok Kullanıcılı Bir Prototip Oyun Yazılımı*, Otomatik Kontrol Ulusal Toplantısı - (TOK 2008), İstanbul, Nov. 2008, Otomatik Kontrol Ulusal Toplantısı Bildiriler Kitabı, pp. 692-698 (2008).
- 5 M. U. Öney, A. Çevik, N. E. Çağiltay, Ö. Kılıç  
*Topluluk Zekası Yönetimi ve Optimizasyonu*, Akademik Bilişim 2007, Dumlupınar University, Kütahya, Turkey, Jan. 2007, IX.Akademik Bilişim Konferansı Bildiriler Kitabı, pp.333-340 (2007).

## Honours, Awards, External Fundings

- |           |                                                                                                                                                                                                                                              |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2023-2026 | TUBITAK 1501 project, May Cyber Technology, Ankara. 3 years. Consultant role. Funding: 7300000 TRY.                                                                                                                                          |
| 2015-2016 | Postdoctoral research funding, The Scientific and Technological Research Council of Turkey (TUBITAK 2219). 1 year. Funding: 30000 USD.                                                                                                       |
| 2015      | Merit award for the 2015 International Conference of Computer Science and Applications (ICCSA 2015), Berkeley, USA. Paper title: <i>An Infinite Proper Subset of Regular Languages as a State Change Based Coupling of Finite Automata</i> . |

## Conference Presentations

July 2023	<i>QPL 2023 - 20th International Conference on Quantum Physics and Logic</i> , 17-21 July, Institut Henri Poincaré, Paris, France.
October 2016	<i>Mini-Workshop in Logic and its Applications</i> , Boğaziçi University, Istanbul, Turkey.
Feb 2016	<i>ASL Southeastern Logic Symposium 2016</i> , University of Florida, Gainesville, FL, USA.
Jun 2015	<i>5th World Congress and School on Universal Logic</i> , University of Istanbul, Turkey. (Invited keynote speaker)
Sep 2015	<i>British Logic Colloquium</i> , Cambridge University, Cambridge, UK.
July 2015	<i>Computability in Europe 2015</i> , Bucharest, Romania, June 29-July 3 2015.

## Presented Lecture Series

The lectures given below have been taught in the award-winning Nesin Mathematics Village in Turkey, also as a community service.

8-14 Sep 2014	<i>A short introduction to recursion theory and <math>\Pi_1^0</math> classes</i> , Nesin Mathematics Village, Turkey.
31 Jul-7 Aug 2017	<i>Unsolvability</i> , Nesin Mathematics Village, Turkey.
5-12 August 2018	<i>Introduction to Quantum Computing</i> , Nesin Mathematics Village, Turkey.
13-19 August 2018	<i>Philosophy of Mathematics</i> , Nesin Mathematics Village, Turkey.
17-23 June 2019	<i>Propositional and Predicate Logic</i> , Nesin Mathematics Village, Turkey.
7-14 August 2021	<i>Introduction to Forcing</i> , Nesin Mathematics Village, Turkey.
15-22 August 2022	<i>Paradoxes</i> , Nesin Mathematics Village, Turkey.

## Programming skills

L<sup>A</sup>T<sub>E</sub>X, C++, Python, HTML.

## Seminar Talks

- 2009 Atılım University, Dept. of computer engineering: Crisis in the foundation of mathematics.
- Oct 2009 Atılım University, Dept. of computer engineering: An infinite proper subset of regular languages and abstract power consumption.
- Dec 2009 Atılım University, Dept. of mathematics: Undecidable statements on a functional property of universal models of computation.
- Feb 2011 University of Leeds, School of Mathematics: Consistency strength and higher axioms of ZFC.
- Mar 2011 University of Leeds, School of Mathematics: Degrees of the members of  $\Pi_1^0$  classes.
- Mar 2011 Ankara University, Department of Mathematics: Introduction to recursion theory and  $\Pi_1^0$  classes.
- Oct 2011 University of Leeds, School of Mathematics: Formal languages.
- Dec 2011 Atılım University, Department of Mathematics: Degrees of Undecidability.
- Dec 2011 Ankara University, Department of Mathematics: Tutarlılık gücü ve ZFC'nin yüksek belitleri.
- Dec 2011 Middle East Technical University, Department of Mathematics: Degrees of Unsolvability.
- Mar 2012 University of Leeds, School of Mathematics: Infinite time Turing machines.
- May 2012 University of Leeds, School of Mathematics: Computational length of infinite time Turing machines.
- Nov 2012 University of Leeds, School of Mathematics: Antibasis theorems for  $\Pi_1^0$  classes.
- Apr 2013 Atılım University, Department of Computer Engineering: A concise introduction to recursion theory.
- Apr 2013 Ankara University, Department of Mathematics: Antibasis theorems for  $\Pi_1^0$  classes.
- Jan 2014 University of Leeds, School of Mathematics: Degree theoretic properties in effectively closed sets.
- Oct 2014 Ankara University, Department of Mathematics: Current trends in theory of unsolvability.
- Oct 2014 Middle East Technical University, Department of Mathematics: Study of unsolvability.
- Nov 2014 Atılım University, Department of Mathematics: Philosophical analysis of the formalization of mathematics.
- Nov 2014 Middle East Technical University, Department of Philosophy: On the formalization of mathematics.
- Mar 2015 Hacettepe University, Department of Mathematics: Algorithmic Unsolvability.
- Feb 2016 University of California at Berkeley, Department of Mathematics: Degree theoretic properties of  $\Pi_1^0$  classes.
- Mar 2017 Gazi University, Department of Mathematics: What is the Axiom of Choice?
- Mar 2017 Boğaziçi University, Department of Philosophy: On the naturality, or otherwise, of the Axiom of Choice.
- Mar 2017 Mimar Sinan Fine Arts University, Department of Mathematics: Effectively closed sets in recursion theory.
- Apr 2017 Abant İzzet Baysal University, Department of Mathematics: Understanding the Axiom of Choice.
- May 2017 Middle East Technical University, Department of Mathematics: What is computability?
- Nov 2017 Middle East Technical University, Department of Mathematics: Determining the axioms: The Choice Axiom example.
- May 2018 Atılım University, Department of Computer Engineering: Why strong A.I. is not likely to be achieved.
- July 2018 Middle East Technical University, Department of Computer Engineering: Quantum Computing - An Introduction for Computer Scientists.
- August 2018 Nesin Mathematics Village, What is Philosophy of Mathematics?



November 2018	Hacettepe University, What is Modern Mathematics?
Feb 2019	Doğuş University, Department of Computer Engineering, How Quantum Algorithms Work.
Nov 2019	Hacettepe University, Department of Mathematics, Model theoretic properties of committed graphs and their palindromic characterisation.
Dec 2019	Boğaziçi University, Department of Philosophy, Mathematical Pluralism.
Dec 2021	Middle East Technical University, Department of Computer Engineering, ImageLab Seminar Series, Computability as an evolving notion.
May 2022	Bilkent University, Department of Computer Engineering, Characterising Infinite Collections via the 'Most' Quantifier.
October 2022	11.Bahar Matematik Buluşması, Istanbul University, Hesaplanabilir Fonksiyonların Doğal Tanımı.