

FIRTINA KÜÇÜK

TEACHING FELLOW AT MARY IMMACULATE COLLEGE

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Education and Research

University College Dublin, Dublin, Ireland

September 2019 – October 2023

Ph.D. in Mathematics

- Passed the viva on 10 July 2023 and the degree is awarded on 20 October 2023.
- Supervised by Assoc. Prof. Kâzım Büyükboduk
- Thesis Title: Iwasawa Theory of Symmetric Rankin-Selberg Product of Modular Forms and Applications

Koç University, İstanbul, Turkey

September 2017 – August 2019

M.Sc. in Mathematics

GPA: 3.92/4.00

- Supervised by Prof. Varga Kalantarov
- Thesis Title: Global Behaviour of Solutions to Nonlinear Damped Wave Equations

Koç University, İstanbul, Turkey

September 2012 – June 2017

B.Sc. in Mathematics & B.Sc. in Computer Engineering (Double Major)

GPA: 3.33/4.00

- Senior design project for Computer Engineering, supervised by Prof. Deniz Yüret and Erenay Dayanık
- A web interface was built with NodeJS & React for the VQA (Visual Question Answering) models trained by Erenay Dayanık.
- Independent study, supervised by Prof. Varga Kalantarov
- The article of H. A. Levine about blow-up of solutions to nonlinear parabolic equations was investigated.

İstanbul University State Conservatory, İstanbul, Turkey

2004 – 2013 & 2014 – 2016

Part-Time Piano Department, Advance Level & Two-year Masterclass

Articles and Preprints

1. F. Küçük, “Factorization of algebraic p -adic L -functions attached to adjoint representations of Coleman families: Non-critical case,” [arXiv:2310.00472v2](https://arxiv.org/abs/2310.00472v2) [math.NT] (submitted)

Talks, Summer Schools, Conferences

- Upcoming Talk: “Factorization of algebraic p -adic Rankin-Selberg L -functions” at ICMAT (Madrid, Spain, November 2024)
- Upcoming Talk: “Factorization of algebraic p -adic Rankin-Selberg L -functions” at Mary Immaculate College (Tipperary, Ireland, October 2024)
- Talk: “Factorization of algebraic p -adic Rankin-Selberg L -functions” at FGC-HRI-IPM Number Theory Seminars (online, April 2024)
- Poster Presentation: “Factorization of Algebraic p -adic L -functions of Adjoint Representations of Coleman Families” at the Conference: Modular Forms, L -functions, and Eigenvarieties (ENS, Paris, June 2024)
- Talk: “Factorization of algebraic p -adic Rankin-Selberg L -functions” at FGC-HRI-IPM Number Theory Seminars (online, April 2024)
- Talk: “Factorization of algebraic p -adic L -functions of Rankin-Selberg products” at Ottawa/Carleton Number Theory Seminar (online, March 2024)
- Talk: “Factorization of p -adic L -functions: Towards the θ -critical case” at UCD Algebra and Number Theory Seminars (November 2023)
- Talk: “Factorization of Algebraic p -adic L -functions Attached to Adjoint Representations of Coleman Families” at Koç University (December 2022)
- Talk: “Factorization of Algebraic p -adic L -functions Attached to Adjoint Representations of Coleman Families” at UCD Algebra and Number Theory Seminars (March 2022)
- Mini Workshop: “Set Theory and Ordinal Numbers” at Koç University (December 2016)
- Mini Workshop: “Constructing Numbers: From Natural Numbers to Real Numbers” at Koç University (March 2017)

Non-Academic Work Experience

Vertigo Games LTD.

Summer 2016

Intern at Game Development Department

İstanbul

- Compulsory internship for Computer Engineering degree (20 workdays)
- Tasks: Simple mobile game with Unity Game Engine

Betek Color Industry Co.

Summer 2015

Intern at IT Department

İstanbul

- Compulsory internship for Computer Engineering degree (20 workdays)
- Tasks: Mini projects with SAP's ABAP programming language

Skills and Interests

Research Interests: Algebraic Number Theory, Arithmetic Geometry, Iwasawa Theory

Languages: Turkish (mother tongue), English (fluent), German (beginner level)

Computer & Programming Skills: Holding a Double Major Degree in Computer Engineering. GitHub:

<https://github.com/firtinakucuk>. Experience with Python, Javascript, Java, MATLAB, MAGMA Computer Algebra System, LaTeX, C, C# (Unity), SAP-ABAP. Special interest in Front End Web Development with React & Backend Development with NodeJS. I built the Koç University-Math204 page for 2018-2019 and 2019-2020 academic year using React: <http://home.ku.edu.tr/~math204/> (GitHub link: <https://github.com/firtinakucuk/Math204-Webpage>)

Music Skills: Playing piano since 2002. Graduated from İstanbul University State Conservatory – Piano Department (Part Time – Advanced Level) in 2013. Also graduated from two-year masterclass of the same conservatory (2014-2016).

Teaching Experience

Mary Immaculate College - Thurles

August 2024 – November 2024 (Anticipated)

Teaching Fellow (Lectures & Tutorials & Labs)

Tipperary, Ireland

- MHP4738 - Computational Mathematics (SageMath, 3 Lectures 1 Tutorial)
- MHP4731 - Elementary Number Theory (3 Lectures 1 Tutorial)

University College Dublin

September 2019 – August 2024

Tutor (Tutorials & Grading & Invigilation)

Dublin, Ireland

- MST10030 - Linear Algebra I
- MATH10220 - Foundations of Math for Computer Science II
- MATH30400 - Further Groups and Rings (I also covered a few lectures)
- MATH10240 - Mathematics for Agriculture II (Tutor for 5 consecutive years)
- MATH10200 - Matrix Algebra
- MATH00010/MST00050 - Introduction to Mathematics/Mathematics: An Introduction (Tutor for 5 consecutive years)
- MATH10310 - Calculus for Science
- MATH10430 - Intro Calculus Engineers(NUin)
- MATH20060 - Calculus of Several Variables
- MATH10210 - Foundations of Maths for Computer Science I
- MATH10130 - Intro to Analysis for Economics and Finance

Koç University

Spring 2017 – Spring 2019

Teaching Assistant (Problem Sessions & Grading & Invigilation)

İstanbul, Turkey

- Math 104 - Discrete Mathematics
- Math 103 - Introduction to Abstract Mathematics
- Math 401 - Complex Analysis (For 2 consecutive years)
- Math 204 - Differential Equations (For 2 consecutive years)
- Math 301 - Real Analysis I
- Math 203 - Multivariable Calculus (During the last semester of my undergraduate)

Koç University & Stanford University

Summer 2017

Section Leader at CS-Bridge Program

İstanbul, Turkey

- CS-Bridge was a two-week summer school for programming aimed for high school students. The summer school was co-organized by Koç University and Stanford University (Assoc. Prof. Barış Bozkurt, Prof. Nick McKeown and their colleagues) and it took place at Koç University.
- Section leaders held discussion & lab sessions, provided mentoring to a section of 8 students.

Koç University Office of Learning and Teaching (KOLT)

Spring 2017

Tutor at KOLT (individual tutorials)

İstanbul, Turkey

- KOLT Tutoring Center provides free individual tutorials to the Koç University students.
- Tutored Math 206 (Abstract Algebra II – Galois Theory) module.

Honors and Awards

Vehbi Koç High Honors Award : Awarded for attaining an outstanding academic performance and GPA/SPA over 3.50 (2014, 2015, 2017)

Bronze Medal in National Mathematics Olympiads in Turkey (2011)

Silver Medal in Antalya Mathematics Olympiads (2011)

MEB İstanbul Science Olympiads Bronze Medal (2011)

Sabancı University Mathematics Competition 3rd prize (2011)

Bilgi University Cahit Arf Mathematics Days Honorable mention (2010)

Scholarships

UCD Ph.D. Advance Core Scheme 2019-2023

TUBITAK – Bideb 2210 : Given during the master's study, as a continuation of Bideb 2205 (2017-2019)

TUBITAK – Bideb 2205 : Given to the science major students who was in top 5000 nationwide in the university entrance exams (2012-2017)

TEV (Turkish Education Foundation) High Success Scholarship (2012-2017)

Koç University Semahat Arsel Scholarship : Given to the students who entered Koç University in the top 30 (2012-2017)