

CONTACT INFORMATION	Institute of Mathematical Sciences ShanghaiTech University School of Creativity and Arts No.393 Middle Huaxia Road, Pudong New District, Shanghai	Email: duanlian@shanghaitech.edu.cn l.duanzwz@gmail.com Personal page: https://ohmybaby0001.github.io/ Office: 419
EMPLOYMENT	ShanghaiTech University , Shanghai, China Assistant professor Colorado State University , Fort Collins, CO, USA Rocky Mountain Postdoc fellow Supervisor: Jeff Achter, Rachel Pries	<i>August 2022 - present</i> <i>September 2019 - August 2022</i>
EDUCATION	University of Massachusetts Amherst , MA, USA Ph.D., Mathematics Advisor: Siman Wong MSRI , Berkeley, CA, USA Program Associate Sichuan University , Sichuan, China M.S., Mathematics Advisor: Guohua Peng Sichuan University , Sichuan, China B.S. in Mathematics	<i>September 2013 - July 2019</i> <i>July 2017 - August 2017</i> <i>September 2009 - May 2013</i> <i>September 2005 - May 2009</i>
RESEARCH INTERESTS	Arithmetic Geometry, Number Theory, Galois Representation, Algebraic Geometry (over finite fields) and the computational aspects of the above.	
PUBLICATIONS	<ol style="list-style-type: none"> 1. <i>On the essential torsion finiteness of abelian varieties over torsion fields</i> (with Jeff Achter and Xiyuan Wang) Accepted, to be published in Nagoya Mathematical Journal. [arXiv] 2. <i>Irreducibility of geometric Galois representations and the Tate conjecture for a family of elliptic surfaces</i> (with Xiyuan Wang). Mathematical Research Letters, Volume 28, Number 5, 1353–1378, 2021 [DOI, arXiv] 3. <i>Generalizations of Alladi's formula for arithmetical semigroups</i> (with Ning Ma and Shaoyun Yi). The Ramanujan Journal (2022). [DOI, arXiv] 4. <i>Analogues of Alladi's formula over global function fields</i> (with Biao Wang and Shaoyun Yi). Finite Fields and Their Applications, 74 (2021). [DOI, arXiv] 5. <i>Faltings Serre method on three dimensional selfdual representations</i> Mathematics of Computation, 90 (2021), no. 328, 931–951. [DOI, arXiv] 6. <i>Transverse lines to surfaces over finite fields</i> (with Shamil Asgarli and Kuan-Wen Lai). manuscripta mathematica, 165 (2021), no. 1-2, 135–157. [DOI, arXiv] 	

7. *Galois action on the Néron-Severi group of Dwork surfaces*
Journal of Number Theory, 210 (2020), 389–415. [DOI, arXiv]
8. *Some results on non congruent numbers*
(with Guohua Peng).
Journal of Sichuan University (Natural Science Edition) 2015, 52(4), 741-747.

PREPRINTS

1. *Frobenius nonclassical hypersurfaces*
(with Shamil Asgarli and Kuan-Wen Lai).
Submitted, 2022. [arXiv]
2. *Nonsplitting of the Hilbert exact sequence and the principal Chebotarev density theorem*
(with Kelly Emmrich, Ning Ma and Xiyuan Wang).
Submitted, 2021. [arXiv]
3. *Transverse linear subspaces to hypersurfaces over finite fields*
(with Shamil Asgarli and Kuan-Wen Lai).
Submitted, 2022. [arXiv]

PROJECTS ON GOING

1. *Refinement of the Effective Chebotarev density theorem for function fields*
(with Ning Ma and Shaoyun Yi).
file available upon request.
2. *Irreducibility of certain five dimensional geometric representations*
(with Ariel Weiss and Xiyuan Wang).
3. *Torsion finiteness for Drinfeld modules*
(with Jiangxue Fang and Xiyuan Wang).

TALKS AND POSTER SESSIONS	“Bertini’s theorem over finite fields and Frobenius nonclassical varieties” Sichuan University, Invited talk.	June 27th, 2023
	“Torsion points of abelian varieties over torsion fields ” Shanghai Jiao Tong University, Invited talk.	June 9th, 2023
	“Torsion points of abelian varieties over torsion fields ” University of Electronic Science and Technology of China, Invited talk.	October 21st, 2022
	“Torsion points of abelian varieties over torsion fields ” Sichuan University, Invited talk.	December 18th, 2021
	“Torsion points of abelian varieties over large fields ” Capital Normal University, Invited talk.	November 20, 2021
	“Torsion points of abelian varieties over large fields ” Amherst college, Five College Number Theory Seminar 2021, Invited talk.	November 16, 2021
	“Principal version of the Chebotarev density theorem and class group” Young Researchers in Algebraic Number Theory 2021.	August 19, 2021
	“Bertini’s theorem over finite field and Frobenius nonclassical varieties” Colorado State University, Front Range Number Theory Day, Invited talk.	April 24, 2021

“Bertini’s theorem over finite field and Frobenius nonclassical varieties” April 8, 2021
Simon Fraser University, Number Theory and Algebraic Geometry Seminar, Invited talk.

“Irreducibility of 3-dimensional selfdual representations and Tate conjecture” October 8, 2020
Sichuan University, Invited talk.

“An application of Fontaine-Mazur conjecture to Tate conjecture” February 26, 2020
Johns Hopkins University, Number Theory Seminar at Johns Hopkins University, Invited talk.

“An application of Fontaine-Mazur conjecture to Tate conjecture” February 9, 2020
Occidental College, Number Theory Series in Los Angeles II.

“Comparison of 3-dimensional Galois representations by computational method” January 18, 2020
Denver, Joint Mathematics Meeting.

“Irreducibility of 3-dimensional selfdual representations and Tate conjecture” January 10, 2020
Southwest Jiaotong University, Invited talk.

“Fontaine-Mazur conjecture and its application to Tate conjecture” November 16, 2019
Colorado State University, Front Range Number Theory Day.

“Irreducibility of 3-dimensional selfdual representations” November 11, 2019
Colorado State University, Number Theory lab.

“Transverse Lines to Hypersurfaces over Finite Fields” June 10, 2019
Amherst College, Ideals, Varieties, Applications. (Poster).

“Factorization of Hasse-Weil zeta functions of Dwork surfaces” April 11, 2019
University of California, Irvine, Invited talk.

“Transverse lines to surfaces over finite fields” March 22, 2019
University of Massachusetts Amherst, Algebraic Geometry Northeastern Series (AGNES). (Poster).

“Factorization of Hasse-Weil zeta functions of Dwork surfaces” February 26, 2019
University of Massachusetts Amherst, Five College Number Theory Seminar.

“Faltings-Serre method on three dimensional representations” January 4, 2019
Sichuan Normal University, Invited talk.

“Explicit generators of Néron-Severi groups of Dwork surfaces” October 19, 2018
University of Massachusetts Amherst, Graduate Student Seminar.

“Galois representation of Dwork surfaces” August 21, 2018
MIT, Arithmetic Geometry, Number Theory, and Computation.

“Elliptic curves and congruent numbers” April 30, 2015
University of Massachusetts Amherst, Graduate Student Seminar.

SEMINAR
ORGANIZED/CO-
ORGANIZED

1. [Number Theory Lab](#), organizer.
2. Graduate students number theory seminar at UMass Amherst, co-organizer.

TEACHING
EXPERIENCE

Lecturer for Linear algebra II	<i>Spring, 2023</i>
Lecturer for Algebra	<i>Fall, 2022</i>
Lecturer for Math 156 (Calculus for computer science)	<i>Spring, 2022</i>
Lecturer for Math 156 (Calculus for computer science)	<i>Fall, 2021</i>

	Lecturer for Math 369 (Linear Algebra)	<i>Fall, 2021</i>
	Lecturer for Math 261 (Calculus III)	<i>Spring, 2021</i>
	Lecturer for Math 160/161/261 (Calculus I, II, III)	<i>Fall, 2020</i>
	Lecturer for Math 101 (Math in the Social Sciences)	<i>Fall, 2020</i>
	Lecturer for Math 369 (Linear Algebra)	<i>Spring, 2020</i>
	Lecturer for Math 161 (Calculus II)	<i>Fall, 2019</i>
	Lecturer for Math 235 (Introduction to Linear Algebras)	<i>Spring, 2019</i>
	Lecturer for Math 132 (Calculus II)	<i>Spring, 2018 - Fall, 2018</i>
	Teaching Assistant for Math 455 (Introduction to Discrete Structures)	<i>Fall, 2017</i>
	Lecturer for Math 235 (Introduction to Linear Algebra)	<i>Summer, 2017</i>
	Lecturer for Math 132 (Calculus II)	<i>Fall, 2016 - Spring, 2017</i>
	Teaching Assistant for Math 132 (Calculus II)	<i>Spring, 2015 - Spring, 2016</i>
	Teaching Assistant for Math 131 & 132 (Calculus I & II)	<i>Summer, 2014</i>
	Grader for Math 532 (Introduction Modern Analysis I)	<i>Spring, 2014</i>
	Grader for Math 331 (Ordinary Differential Equations)	<i>Fall, 2013</i>
CONFERENCES AND SUMMER/WINTER SCHOOLS ATTENDED	The international seminar on L-function and related topics	<i>Aug 5-9, 2023</i>
	The international seminar on L-function and related topics	<i>Aug 5-9, 2022</i>
	Around Frobenius distributions and related topics II	<i>Jun 28-29, 2021</i>
	Curves over Finite Fields: Past, Present and Future	<i>May 25-29, 2021</i>
	Rational Points and Galois Representations	<i>May 10-12, 2021</i>
	An online workshop hosted by the University of Pittsburgh	
	Front Range Number Theory Day	<i>Apr 24, 2021</i>
	Front Range Number Theory Day	<i>Apr 25, 2020</i>
	Front Range Number Theory Day	<i>Sep 26, 2020</i>
	Number Theory Series in Los Angeles I	<i>October 26-27, 2019</i>
	49th John H. Barrett Memorial Lectures: Recent Developments in Number Theory	<i>May 28 - May 30, 2019</i>
	Bi-annual Algebraic and Tropical Meetings of Brown and YaLE (BATMOBYLE)	<i>January 2, 2019</i>
	Joint Mathematics Meetings 2019	<i>January 16- January 19, 2019</i>
	Arizona Winter School 2018: Iwasawa Theory	<i>March 3- March 7, 2018</i>
	MSRI Summer School 2017: Automorphic Forms and the Langlands Program	<i>July 24 - August 04, 2017</i>
	AGNES at Stony Brook	<i>April 21- April 23, 2017</i>
	Arizona Winter School 2017: Perfectoid Spaces	<i>March 11- March 15, 2017</i>
	AGNES at University of Massachusetts Amherst	<i>November 4- November 6, 2016</i>
	Connecticut Summer School in Number Theory	<i>August 8 - August 14, 2016</i>
	AGNES at Yale University	<i>April 8 - April 10, 2016</i>
	Arizona Winter School 2016: Analytic Methods in Arithmetic Geometry	<i>March 12 - March 16, 2016</i>

HONORS AND AWARDS	Department fellowship	<i>2018</i>
	Department fellowship	<i>2015</i>
	Excellent Prize in Graduate thesis	<i>2013</i>
	Excellent Prize in Undergraduate thesis	<i>2009</i>
	Teaching Assistantship, University of Massachusetts Amherst.	<i>2013-2018</i>
COMPUTER LANGUAGES	Pari/gp, Magma, Sagemath, Mathematica, C, L ^A T _E X	