

Seyed Ata Tahuri Turki

Curriculum Vitae

The Pennsylvania State University
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DOB: August 21, 1998

Education

- 2023-present **Doctor of Philosophy, Mathematics**, Department of Mathematical Science, Pennsylvania State University, USA.
Advisor: Federico Rodriguez-Hertz
- 2020-2022 **Master of Science, Mathematics**, Department of Mathematical Science, Sharif University of Technology, Tehran, Iran. .
- 2016-2020 **Bachelor of Science, Mathematics**, Department of Mathematical Science, Sharif University of Technology, Tehran, Iran..

Grants Awarded

- 2023-present **Graduate Teaching Assistantship** , Pennsylvania State University .
- 2023 **Departmental Graduate Supplement Award**, Pennsylvania State University, Awarded for outstanding academic and research performance.
- 2020 **National Elite Foundation fellowship**, Iran's National Elite Foundation supported talented students, in my situation because of grades' ranking in bachelor degree.
- 2020 **Exempt of Master's Entrance exam**, due to high grade ranking.
- 2016 **University Entrance exam**, Top 0.7 percent of over 150,000 students who sat the nationwide university entrance exam for BSc Mathematics and Physics.

Achievements

- 2025 **Passed Ph.D. Comprehensive Examination**, evaluated by three faculty members in mathematics and one in physics.
- 2024 **Qualified for Doctor of Philosophy in Mathematics by Passing four Qualifying Exams**(Linear Algebra, Real Analysis, Complex Analysis, Functional Analysis).
- 2013,2014,2015 **Qualified for Mathematical Olympiad in Iran**.
- 2015 **Ranked 2nd in Tournament of Moscow(Math competition)** in Tabriz.
- 2012 **Qualified for Prestigious Exceptional Talents High-School in Iran**.

Research

- PhD Thesis(To be finished by 2028): u -Gibbs and SRB measures on Partially Hyperbolic Systems
Supervisor: Dr. Federico Rodriguez-Hertz
- Master Thesis: Classification of Partial Hyperbolic Diffeomorphisms on 3-manifolds.
Supervisor: Dr. Meysam Nassiri, Institute for Research in Fundamental Sciences(IPM)
- Impossibility of Isometric Immersion of a Flat n -Dimensional Plane into B^{2n-1}
Supervisor: Dr. Anton Petrunin
- BSc project about "an Application of Dynamical Systems in Neuroscience: Finding an upper bound for attractors based on Hodgkin-Huxley PDE model.

Dr. Fotouhi Firouzabad, Department of Mathematics, Sharif University of Technology

- Hilbert Polynomial for Graded Modules(in Persian, Course Research, Based on Chapter 7.15 of Basic Algebra 2 by Nathan Jacobson, Second Edition).

Dr. Gholamzadeh-Mahmoudi, Department of Mathematics, Sharif University of Technology

Talk

- May 2026 **u-Gibbs and SRB measures in partially hyperbolic setting**, *Dynamics Seminar*, CUNY university, USA.
- April 2026 **Ratner's Theorem application to Oppenheim's conjecture**, *Dynamical Systems Student Seminar*, Pennsylvania State University, USA.
- April 2026 **Ratner's Theorem**, *Dynamical Systems Student Seminar*, Pennsylvania State University, USA.
- March 2026 **Random Dynamics**, *Dynamical System Student Seminar*, Pennsylvania State University, USA.
- November 2024 **Hilbert's sixth Problem(Combinatorics bounds)**, *SIMP(Snapshots in Mathematical Physics)*, Pennsylvania State University, USA.
- March 2024 **Low Dimensional Dynamics**, *Graduate Students Seminar*, Pennsylvania State University, USA.
- December 2021 **Hyperbolicity in Smooth Maps: Mañé Theorem**, *School of Mathematics Hyperbolicity in Smooth Maps:Mañé Theorem Institute for Research in Fundamental Sciences (IPM), Workshop*, <http://math.ipm.ir/gt/WDS2021.html>.
- October 2020 **Applications of Dynamical Systems in NeuroScience**, *Peyvast*, Sharif Univesity of Technology, Tehran.
- July 2021 **Construction of Brownian motion using $C[0,1]$ functions in Stochastic Analysis Course**, Teacher: Dr. Erfan Salavati, Department of Mathematics, Amirkabir University of Technology.

Projects

- December 2025 **Partially Hyperbolic Systems: Non-Integrability of Center Foliation**
Prof. Yakov Pesin, Department of Mathematics, Pennsylvania State University
- December 2025 **Dynamical Systems 2: Non absolutely continuous foliation**
Prof. Yakov Pesin, Department of Mathematics, Pennsylvania State University
- April 2024 **Stochastic Processes: Concentration of Measure phenomenon**
Prof. Alexei Novikov, Department of Mathematics, Pennsylvania State University
- February 2021 **Stochastic Processes: How to construct Brownian Motion from Random Walk?**
Dr.Salavati, Department of Mathematics, Amirkabir University of Technology
- February 2020 **Machine Learning Theory: Deep Reinforcement learning for dot game using Python.**
Dr. Alishahi, Department of Mathematics, Sharif University of Technology
- July 2020 **Cryptography: The Bitcoin backbone protocol:Analysis and Applications**
Dr. Khazaei, Department of Computer Science, Sharif University of Technology

- July 2020 **Game Theory: Analysing dynamics of Cancer using Evolutionary game theory .**
Dr. Fatemi, Department of Administration and Finance, Sharif University of Technology
- May 2018 **Numerical analysis 2: Solving Partial Differential Equations(PDE) numerically by finite element method using Matlab.**
PhD Researcher: Negin Bagherpour, Sharif University of Technology
- May 2018 **Topics in Math Modeling: A Game Theoretic Approach in Bidding Strategy in Iran for Electricity Market.**
Dr. Alishahi, Department of Mathematics, Sharif University of Technology
- September 2016 **Basic programming(BP): Creating reduced Google search method using Java.**
Dr. Zarei, Department of Computer Science, Sharif University of Technology
- February 2016 **Discrete Math: Creating Hadamard matrix and magic square using Sage.**
Dr. Jafari, Department of Mathematics, Sharif University of Technology

Technical Skills

Programming PYTHON, JAVA, R, MATLAB, SAGE
 Software LATEX, MS EXCEL, TABLEAU, AUTO CAD

Interests

- Hyperbolic Dynamical Systems, Ergodic Theory, Low-Dimensional and Complex Dynamical Systems
- Stochastic Processes
- Partial Differential Equations(PDE), Stochastic Partial Differential Equations
- Mathematical Physics
- Reinforcement learning
- Neuroscience

Teaching Experiences

- Mathematics 230 (Multi-variable Calculus)
 2026- **Instructor-Recitation.**
 2027(Summer)
- 2025-2026 **Instructor.**
- 2023-2024 **Instructor.**
- Mathematics 22 (College Algebra)
 2023-2024 **Instructor.**
 2024-2025 **Instructor.**
 2024-2025 **Instructor.**
- linear Algebra
 2019-2020 **Prof. Akbari, Grader and Lecturer.**
 2019-2020 **Dr. Bahraini, Grader.**
 2020-2021 **Dr. Sharifitabar, Grader.**
 2021-2022 **Dr. Gholamzadeh-Mahmoudi, Head TA (Examiner, Grader and Lecturer).**
- Combinatorics
 2020-2021 **Dr. Ebrahimi Broojeni, Grader.**

- Complex Analysis
2020-2021 **Dr. Fanai**, *Grader and Lecturer*.
- Mathematical analysis 2
2020-2021 **Dr. Safdari**, *Grader*.
- General Mathematics 2
2020-2021 , *Lecturer*.
2021-2022 , *Grader*.
- General Mathematics 1
2021-2022 , *Grader*.
- Real Analysis
2021-2022 **Dr. Fanai**, *Head TA (Grader, Lecturer)*.

Certifications and Seminars

- July 2026 **attended**, *International Congress of Mathematicians(ICM)2026*, PHILADELPHIA.
- April 2026 **attended**, *Workshop on Dynamical Systems and related topics*, MARYLAND UNIVERSITY.
- November 2025 **attended**, *Conference: Semi-annual Workshop in Dynamical Systems and Related Topics at Penn State*, Penn State University.
- October 2025 **attended**, *Siam 2025(Society for industrial and applied mathematics)*, PENN STATE UNIVERSITY.
- May 2024 **attended**, *Ergodic Theory*, BRIN MATHEMATICS RESEARCH CENTER.
- June 2023 **attended**, *Partial Hyperbolicity*, BRIN MATHEMATICS RESEARCH CENTER.
- May 2020 **attended**, *Workshop on Dynamics of Group Actions* , SCHOOL OF MATHEMATICS INSTITUTE FOR RESEARCH IN FUNDAMENTAL SCIENCES(IPM).
- January 2020 **attended**, *Thematic program on Dynamical Systems*, SCHOOL OF MATHEMATICS INSTITUTE FOR RESEARCH IN FUNDAMENTAL SCIENCES(IPM).
- August 2020 **attended**, *Zanjan Math school(subject:Geometrical group theory, Topological graph theory)*, INSTITUTE FOR ADVANCED STUDIES IN BASIC SCIENCES(IASBS).
- August 2019 **attended**, *Zanjan Math school(subject:Convex Analysis, Dynamical Systems with a view towards Number Theory)*, INSTITUTE FOR ADVANCED STUDIES IN BASIC SCIENCES(IASBS).
- November 2019 **attended**, *Social Cognition Symposium*, INSTITUTE FOR COGNITIVE AND BRAIN SCIENCES SHAHID BEHESHTI UNIVERSITY.
- June 2019 **participant**, *Certified Data Science Basic*, SHARIF UNIVERSITY.
- August 2018 **attended**, *Zanjan Math school(subject:Dynamical systems)*, INSTITUTE FOR ADVANCED STUDIES IN BASIC SCIENCES(IASBS).
- April 2018 **attended**, *Brain and Cognitive Science Seminar*, SHARIF UNIVERSITY.
- February-May 2017 **attended**, *Thematic Program on Dynamical Systems*, SCHOOL OF MATHEMATICS INSTITUTE FOR RESEARCH IN FUNDAMENTAL SCIENCES(IPM) .
- May 2017 **attended**, *Certified Android Programming*, TEHRAN UNIVERSITY.

Coursework

Courses Stochastic Processes(GPA: 4.0/4.0), Reinforcement Learning(GPA:4.0/4.0), Partial Differential Equations(PDE)(GPA:4.0/4.0), Optimal Transport Seminar(GPA:4.0/4.0), Stochastic Analysis(GPA:4.0/4.0), Dynamical Systems(4.0/4.0), Basic Programming(GPA:3.0/4.0)

Hobbies

- Chess(Member of Sharif University's chess Team), Tennis
- Playing Guitar
- Calligraphy and Painting

Languages

English Professional Working Proficiency
Persian Native or Bilingual Proficiency
Turkish Native or Bilingual Proficiency

References

- Federico Rodriguez-Hertz, Penn State, Eberly College of Science
email: fjr11@psu.edu
- Yakov Pesin, Penn State, Eberly College of Science
email: ybp1@psu.edu
- Anton Petrunin, Penn State, Eberly College of Science
email: petrunin@math.psu.edu
- Meysam Nassiri, Faculty Member School of Mathematics Institute for Research in Fundamental Sciences (IPM)
email: nassiri@ipm.ir