

CURRICULUM VITAE

Pedram Safari

safari@math.harvard.edu

<http://math.harvard.edu/~safari/>

Academic

AFFILIATIONS

[HARVARD UNIVERSITY](#), Cambridge, MA. in several capacities (currently as a Preceptor), 2006–present.

[THE ABDUS SALAM ICTP](#), Trieste, Italy. Visiting Fellow, 2004–05.

[INSTITUTE FOR STUDIES IN THEORETICAL PHYSICS AND MATHEMATICS \(IPM\)](#), Tehran, Iran. Post-doctoral Research Fellow, Fall 2001–Spring 2004.

[SHARIF UNIVERSITY OF TECHNOLOGY](#), Tehran, Iran. Assistant Professor, 2000–2001.

[COLUMBIA UNIVERSITY](#), New York. Departmental Representative, Summers of 1999 and 2000; Preceptor, 1999–2000.

EDUCATION

[COLUMBIA UNIVERSITY](#), New York, NY. Ph.D. in Mathematics, May 2000.

[SHARIF UNIVERSITY OF TECHNOLOGY](#), Tehran, Iran. B.S. in Mathematics, *summa cum laude*, June 1993.

Research

INTERESTS

Global Analysis, Differential Geometry, Gauge Theory, Geometric Evolution Equations, Mathematics Education and Pedagogy

SELECTED BIBLIOGRAPHY

- *Gluing Seiberg-Witten Moduli Spaces* (mathematical monograph); Lambert Academic Publishing, 2010. ISBN: 978-3-8383-2763-1.
- *Gluing Seiberg-Witten monopoles*; [arxiv: math.DG/0311329](https://arxiv.org/abs/math/0311329); *Comm. An. Geom.*, vol. 13 (2005), no. 4, 697–725.
- *e-Publishing* (survey article in Persian), *Nashr-e Riyazi* **26**, vol. 14 (2003), no. 1, 17–34.
- *What is Seiberg-Witten theory?* (expository article in Persian), *Nashr-e Riyazi* **23**, vol. 12 (2001), no. 1-2, 4–11.
- *A gluing theorem for Seiberg-Witten moduli spaces*, Ph.D. dissertation, Columbia University, 2000. Dissertation Committee: Masatake Kuranishi, Brian Mangum, John W. Morgan (advisor), Tomasz S. Mrowka, Duong H. Phong (Chair).

Teaching

AS PRECEPTOR. To develop a mathematical curriculum for graduate students in social sciences to satisfy their ever-growing needs in mathematical methods and modelling, as coming up in the study of various social phenomena, in disciplines as diverse as public health, psychology, education, government, social policy making, etc. Other responsibilities include mentoring graduate students in their mathematical projects and theses, as well as organizing workshops on various topics of interest, such as dynamical systems, game theory, network theory, optimization, etc.

AS SUPERVISOR.

2. Amin Gholampour, *Symplectic Thom Conjecture, a review of the work of Szabó and Ozsváth*, M.S. thesis, Sharif University, July 2002.
1. Seyyed Mohsen Khalkhali, *Finslerian Geometry as a Generalization of Riemannian Geometry*, M.S. thesis, Sharif University, Oct. 2001.

AS INSTRUCTOR. Responsibilities include preparing course materials, lecturing to classes of at most 30 students, designing quizzes and exams and assigning final grades. For most of these courses I have set up class pages, some of which may still be viewed at departmental websites.

- Intermediate Mathematics for Social Scientists (graduate), Harvard University, Spring 2009.
- Basic Mathematics for Social Scientists (graduate), Harvard University, Fall 2008.
- Calculus for Business and Economics, Northeastern University, Fall 2007.
- College Algebra and Trigonometry, Columbia University, 1998–2000, Summers 1998 and 1997. Also, as Pre-Calculus, Harvard University, Summers 2007 and 2008.
- Matrices and Computers, Stevens Institute of Technology, Summer 1998.
- Calculus II A, Columbia University, Summer 1996.
- Introduction to Modern Analysis, Columbia University, Summers 1999 and 2000. (Also at Sharif University, Spring 2001.)
- Elementary Differential Topology, Sharif University of Technology, Spring 1994.
- Geometry of Manifolds II (graduate), Sharif University, Spring 2001, followed by
- Topics in the Geometry of Manifolds (graduate), Sharif University, 2001–02.
- Introduction to Seiberg-Witten theory (graduate), Harvard University, Fall 2007, followed by
- Topics in Seiberg-Witten theory (graduate), Harvard University, Spring 2008.

AS TEACHING ASSISTANT. These involved 2–3 hours per week demonstrating principles and discussing problems using the computer algebra system Mathematica as well as the blackboard. Other responsibilities include holding office hours, holding review sessions and grading. I have assisted Calculus I–IV, Basic Topology, Honors Math, Modern Analysis and Modern Algebra.

Professional

SELECTED ACTIVITIES

- Providing Persian sub-titles for the movie "Dimensions" (joint with Leila Khatami). This movie is a mathematical exposition for the general public, produced with an international collaboration and translated to over 19 languages in its upcoming edition. The website of the movie is at <http://dimensions-math.org/>.
- Reviewer for the *Mathematical Reviews*, since January 15, 2004.
- Member of the Scientific Committee of the 2nd Iranian Geometry-Topology Conference. Amir-Kabir University, Tehran, February 3–5, 2003.
- Co-editor of *Shahyad*, a festschrift in honor of S. Shahshahani's 60th birthday. Published in May 2002.
- Member of the Editorial Board of *Nashr-e Riazi*, an expository math journal in Persian. Tehran, 2002–2005.

SELECTED TALKS

- *Seiberg-Witten monopoles and 4-manifold surgery*, Algebraic Geometry Seminar, [Department of Mathematics, CalTech](#), Pasadena, CA; May 5, 2008.
- *Gluing Monopoles*, Differential Geometry and Geometric Analysis Seminar, [Department of Mathematics, Princeton University](#), Princeton, NJ; December 7, 2007.
- *Gluing Seiberg-Witten Monopoles: an outline*, Gauge Theory and Topology Seminar, [Department of Mathematics, Harvard University](#), Cambridge, MA; March 23, 2007.
- *Gluing Seiberg-Witten Monopoles*, [Fakultät für Mathematik, Universität Bielefeld](#), Germany; October 18, 2005.
- *Gluing Seiberg-Witten Monopoles: a mathematical approach*, [The Abdus Salam ICTP](#), Trieste, Italy; March 31, 2004.
- *Floer Homology and Novikov Rings*, Columbia Gauge Theory Seminar, June 1997.
- *Complex Analysis: The Geometric Viewpoint*, Sharif University of Technology, Tehran, Iran, 1993. A series of lectures, jointly with Saeed Zakeri, following a book by S. Krantz of the same title.
- *Perturbations of Hamiltonian Systems and Abelian Integrals*, Dynamical Systems Seminar, Sharif University of Technology, 1992.
- *Linear Flows in the Complex Domain*, weekly colloquium, Sharif University of Technology, 1991.

SELECTED VISITS

- Workshop on Geometric Evolution Equations, March 12–16, 2007. MSRI, Berkeley, CA. On NSF and FRG grants.
- CMI Summer School on Ricci Flow, 3-manifolds and Geometry, June 20 – July 15, 2005. [MSRI](#), Berkeley, CA. On Clay Institute support.
- CMI Summer School on Floer Homology, Gauge Theory, and Low Dimensional Topology, June 6–26, 2004. [Alfréd Rényi Institute of Mathematics](#), Budapest, Hungary. On Clay Institute support.
- The [Abdus Salam International Centre for Theoretical Physics](#) (ICTP), Trieste, Italy; March-August 2004 and August 1994.
- [Laboratoire de Mathématiques](#), Université Paris-Sud , Orsay, France; January 10–24, 2003.

COMPUTER SKILLS

- Well acquainted with Mac-OS, UNIX, Windows and MS-DOS.
- Working knowledge of LaTeX, MS Word, Excel, Emacs, Xfig and Mathematica.
- Familiarity with various Adobe and Macromedia softwares.
- Rudiments of programming.

LANGUAGES

Persian (native), English (fluent), French (good; [DELFF](#): A2), Italian (fair), Arabic (good in reading), German (fair in reading), HTML (good), Java (fair).

References

JOHN W. MORGAN
Professor of Mathematics
Columbia University
2990 Broadway, Mailcode 4406
New York, NY 10027
jm@math.columbia.edu

PATRICK GALLAGHER (*Teaching Ref*)
Professor of Mathematics
Columbia University
2990 Broadway, Mailcode 4406
New York, NY 10027
pxg@math.columbia.edu

CLIFFORD H. TAUBES
Professor of Mathematics
Harvard University
One Oxford Street
Cambridge, MA 02138
chtaubes@math.harvard.edu

CUMRUN VAFA
Professor of Physics
Harvard University
17 Oxford Street
Cambridge, MA 02138
vafa@string.harvard.edu