

## Alireza Bahraini

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CONTACT INFORMATION	Dept. of Math. Sci. Sharif University of Technology Azadi Street- Tehran Iran P.O.Box 11365-11155	(+98)9102121646 bahraini@sharif.edu
RESEARCH INTERESTS	Computational Neuroscience, Machine Learning, Variational Bayesian Methods, Spin glass methods, Complex geometry, Supergeometry and Mathematical Physics	
CURRENT POSITION	Associate Professor, Dept. of Math. Sci. Sharif University of Technology Tehran-Iran, Since October 2004.	
VISITING POSITIONS	<ul style="list-style-type: none"><li>• Center of Mathematical Sciences and Applications, Harvard University , Cambridge, MA 02138 USA, Feb-July 2017</li><li>• Laboratory of Signals and Systems, Centralesupelec, University Paris Sud Paris-France, Feb- July 2016</li></ul>	
EDUCATION	<b>University of Paris 7</b> , Paris, France  Ph.D., Mathematics, July 2004 <ul style="list-style-type: none"><li>• Thesis Topic: <i>Supersymmetry and Complex Geometry</i></li><li>• Advisor: Daniel Bennequin, Ph.D</li></ul> M.S.(DEA in Mathematics), Mathematics, Aug 2001 <ul style="list-style-type: none"><li>• Topic: <i>Mass Positive Conjecture</i></li><li>• Advisor: Daniel Bennequin, Ph.D</li></ul> <b>Sharif University of Technology</b> , Tehran, Iran  M.S., Mathematics , 2000 Aug <ul style="list-style-type: none"><li>• Topic: <i>Singularities of Holomorphic Foliations</i></li><li>• Advisor: Bahman Khanedani, Ph.D</li></ul> B.S., Mathematics, July 1998	
PAPERS IN PREPARATION	<ol style="list-style-type: none"><li>1. <b>Bahraini, A.</b> “Optimal Transport and Bayesian Mean Field Approximation”</li><li>2. <b>Bahraini, A.</b>, Shing Tung Yau, “Degenerate Complex Monge Ampère Equations”</li><li>3. <b>Bahraaini, A.</b> “ On a class of Singular Complex Manifolds”</li><li>4. <b>Bahraini, A.</b> “ Generalized Superchirality on Supermanifolds”</li></ol>	

SELECTED  
JOURNAL  
PUBLICATIONS

1. **Bahraini, A.**, A.Abbasian, “Topological Pattern Selection in Recurrent Networks”, *Journal of Neural Network*, Vol.31, 22-32, 2012.
2. **Bahraini, A.**, A.Bahraini, “On the Deformation Theory of CY Structures in Strongly Pseudo-convex Manifolds”, *Bull. Braz. Math. Soc.*, Vol 41, No.3,409-420, 2010.‘
3. **Bahraini, A.** “Special Lagrangian Sub-manifolds and Super-symmetry”, *International Journal of Geometric Methods in Modern Physics*, Vol. 10, No. 7 (2013).
4. **Bahraini, A.** “A Note on Complex Monge-Ampère Equation in Stein Manifolds”, *The Asian Journal of Mathematics*, 12 (2008),
5. **Bahraini, A.** A.Bahraini, “Sur une Classe de Surfaces Complexes Dégénérées”, *Comptes Rendues de l’Académie des Sciences Mathématiques*, 344(2007), No.6, 373-376. ‘

PUBLICATIONS IN  
PERSIAN

1. **Bahraini, A.**, “The Architecture of 2-dimensional Surfaces and an Intuitive Proof of the Gauss-Bonnet Theorem. ” *Farhang Va Andisheh Riazi*, 2013.

BOOK  
TRANSLATION

- V.I. Arnold Dynamics Statistics and Projective geometry of Galois fields

CURRENT PH.D.  
STUDENT

Saeed Sadeghi  
Thesis subject: Bayesian inference and its applications

SOME MASTER  
THESIS UNDER MY  
SUPERVISION

- Statistical Mechanics of Neucortex, (Michael A. Buice, Jack D. Cowan)  
A. Mousavi
- Ricci curvature for metric measure spaces via optimal transport, (C.Villani J.Lott)  
A. Taheri
- Morse Theory for the Periodic Solutions of Hamiltonian Systems and the Maslov Index (D. Salamon, E. Zehnder)  
H.Passandideh
- Seiberg-Witten invariants and low dimensional topology  
A. Sheikhalishahi
- Heegard Floer Homology (P. Ozsvath, Z.Szabo)  
M. Salehi
- Hodge theory on metric spaces (S.Smale)  
H. Passebani
- Multisymplectic structure and water wave (JE Marsden)  
A.Nassa.j
- Geometric rigidity and the derivation of non-linear plate theory from three dimensional elasticity (B.Schmidt) ,  
A.J. Golipour
- Eisenstein type series for Calabi-Yau varieties, (H. Movasati )  
M.Mojaver

TEACHING  
EXPERIENCE

Undergraduate  
Topology, Analysis I , Analysis II, Functions of one complex variables, Elementary differential geometry, Introduction to Algebraic topology, Linear Algebra, Engineering mathematics, Calculus I and II

Graduate

Differentiable Manifolds, Algebraic Topology, Riemann surfaces, Lectures on Lie Groups, Lectures on Supermanifolds

HONORS	<ul style="list-style-type: none"><li>• Honored member of National Elites Foundation</li><li>• French Government Scholarship,</li><li>• Gold medal in National Mathematical Olympiad</li><li>• Silver medal in ECO mathematical olympiad</li></ul>	Since 2006 2000-4 1993 1994
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SERVICE	Dean of International Relationships at Department of Mathematical Sciences, Sharif University of Technology.
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SOFTWARE	Familiar with C++, Python, Matlab and R
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LANGUAGES	French , English, Persian
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