BRUNO JEDYNAK

CURRICULUM VITAE up to date as of January 13^{th} 2015

Department of Applied Mathematics and Statistics
and Center for Imaging Science
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Personal:
Born: November 5, 1965, Suresnes, France.
Married, father of three children born in 1990, 1997, and 2000.
Permanent resident in the USA, green card holder.

Current employment:

Associate Research Professor, Dept. of Applied Mathematics and Statistics (AMS), Johns Hopkins University (JHU)

Faculty member, Center for Imaging Science, JHU

Faculty member, Laboratoire Paul Painlevé, Université des Sciences et Technologies de Lille

Education:

- **1989 B. Sc Université Paris XI Orsay, France**.

  1984-1986: Université de Paris X Nanterre, France. Diplôme d'Etudes Universitaires Générales (DEUG) Mathématiques et Applications aux Sciences Sociales (MASS)

  1986-1989: Université de Paris XI Orsay, France. Licence et Maîtrise de Mathématiques Appliquées.

- **1995 Ph. D., Statistics and Stochastic Models, Université Paris XI Orsay, France**.

  1989-1990 Diplôme d'études approfondies (DEA) de Statistiques et Modèles Stochastiques

  1990-January 24, 1995 Thèse de doctorat de l'Université Paris-Sud en Statistiques et Modèles Stochastiques. Supervisors: Professor André Gagalowicz and Professor Donald Geman. Dissertation title: "Modèles stochastiques et méthodes déterministes pour extraire les routes des images de la Terre vues du ciel"[Stochastic Models and Deterministic Methods for Extracting Roads from Remote Sensing Images]. Laboratory: Syntim, Institut National de Recherche en Informatique et Automatique (INRIA)[National Institute for Research in Computer Science and Control], Rocquencourt, France.

- **2014 Thèse d'habilitation à diriger des recherches. USTL, Lille, France**

  Dissertation title: "Le jeu des 20 questions et autres contributions en statistique mathématique et computationnelle"

Previous employment:

- ⋆ March 2005 - August 2008. Assistant Research Professor, AMS, JHU.
- ⋆ September 2003 - February 2005. Visiting Professor, AMS, JHU.
- ⋆ September 1997 - August 2003. Maître de conferences, USTL. [Associate Professor]
- ⋆ September 1996 - June 1997. Postdoctoral Researcher, Dept. of Statistics, University of Chicago.
- ⋆ February 1995- June 1996. Research scientist, INRIA, Rocquencourt.
- ⋆ September 1994 - June 1996 Teaching assistant, IUT de Paris, Université Paris V.
- ⋆ February 1991 - June 1992. Visiting graduate student, Dept. of Mathematics and Statistics, University of Massachusetts at Amherst.

Visiting positions:

- ⋆ Department of Biostatistics, School of Public Health, JHU, June and July 2010.
- ⋆ Laboratoire de Mathématiques Appliquées, Université Paris 5, January 2012.

Honors and Awards:

- ⋆ 1990-1995: INRIA Graduate Student Research Fellowship
- ⋆ 2003-2007: Awarded 4 years Sabbatical leave of absence with 50% professor salary
- ⋆ 2012: Awarded Ossoff scholar on behalf of the Memory and Alzheimer's Treatment Center directors
- ⋆ 2014: Senior member of the IEEE

Publications in peer-reviewed journals:

1. D. Geman and B. Jedynak, "An active testing model for tracking roads from satellite images," *IEEE Transactions on Pattern Analysis and Machine Intelligence* , 18(1), pp. 1-14, 1996.
2. D. Geman and B. Jedynak, "Model-based classification trees," *IEEE Transactions on Information Theory*, 47(3), pp. 1075-1082, 2001.
3. H. Zheng, M. Daoudi and B. Jedynak, "Blocking Adult Images Based on Statistical Skin Detection", *Electronic Letters on Computer Vision and Image Analysis*, 4(2), pp. 1-14, 2004.
4. B. Jedynak, S. Khudanpur, "Maximum Likelihood Set for Estimating a Point Mass Function", *Neural computation*, 17(7), pp. 1508-1530, July 2005.
5. B. Jedynak, H. Zheng and M. Daoudi, "Skin Detection using Pairwise Models",*Image and Vision Computing*, 23(13), pp. 1122-1130, November 2005.
6. B. Jedynak, D. Karakos "Finding a Needle in a Haystack: Conditions for Reliable Detection in the Presence of Clutter", *Statistics and Probability Letters*, 78(5), pp. 471-480, August 2007.
7. H. Huang, B. Jedynak and J. Bader, "Where have all the interactions gone ? Estimating the coverage of two-hybrid protein interaction maps", *PLoS Computational Biology*, *PLoS Comput Biol.*, 3(11), September 2007. This article was selected for Faculty of 1000 Biology.

8. N. Penumetcha, B. Jedynak, M. Hosakere, E. Ceyhan, K.N. Botteron, J.T. Ratnanather, "Segmentation of arteries in MPRAGE images of the ventral medial prefrontal cortex", *Comput Med Imaging Graph* 32(1) pp. 36-43 2008

9. H. Cho, H. Jönsson, K. Campbell, P. Melke, JW Williams, B. Jedynak, A.M. Stevens, A. Groisman and A. Levchenko. "Self-Organization in High-Density Bacterial Colonies: Efficient Crowd Control". *PLoS Biol* 5(11), 2007. This article was featured in ScienceDaily.

10. Joshua Vogelstein, Brendon Watson, Adam Packer, Bruno Jedynak, Rafael Yuste, and Liam Paninski, "Spike inference from calcium imaging using sequential Monte Carlo methods", *Biophysical journal*, 97(2), 2009.

11. Stephanie L. Davis, Eric L. Nuermberger, Peter Um, Camille Vidal, Bruno Jedynak, Martin G. Pomper, William R. Bishail, and Sanjay K. Jain. "Non-invasive pulmonary [18F]-2-fluoro-deoxy-D-glucose positron emission tomography correlates with bactericidal activity of tuberculosis drug treatment", *Antimicrobial Agents and Chemotherapy*, 53(11) 2009.

12. Camille Vidal, Bruno Jedynak, "Learning to Match: Deriving optimal template-Matching algorithms from Probabilist Image Models", *International Journal of Computer Vision* 88(2), 2010.

13. Raphael Sznitman and Bruno Jedynak, "Active Testing for Face Detection and Localization",*IEEE Pattern analysis and Machine Intelligence* 32(10), 2010.

14. Penumetcha N, Kabadi S, Jedynak B, Walcutt C, Gado MH, Wang L, Ratnanather JT, "Feasibility of Geometric-Intensity-Based Semi-Automated Delineation of the Tentorium Cerebelli from MRI Scans". *Journal of Neuroimaging*, 21(2), 2011.

15. Bruno Jedynak, Peter L. Frazier and Raphael Sznitman, "Twenty Questions with Noise: Bayes Optimal Policies for Entropy Loss", Journal of Applied Probability, 49(1), March 2012.

16. Mrudula Pullambhatla, Jean Tessier, Graham Beck, Bruno Jedynak, Jens U Wurthner, Martin G Pomper: "[125I]FIAU imaging in a preclinical model of lung infection: quantification of bacterial load". Am J Nucl Med Mol Imaging 2012;2(3):260-270.

17. Bruno Jedynak, Andrew Lang, Bo Liu, Elyse Katz, Yanwei Zhang, Bradley T. Wyman, David Raunig, Pierre C. Jedynak, Brian Caffo and Jerry Prince for the Alzheimer's Disease Neuroimaging Initiative, "A Computational Neurodegenerative Disease Progression Score: Method and Results with the Alzheimer's Disease Neuroimaging Initiative Cohort", NeuroImage 2012 Nov 15;63(3):1478-86.

18. John A. bogovic, Bruno Jedynak, Rachel Rigg, Annie Du, Bennett A Landman, Jerry L Prince, Sarah H Ying, 'Approaching Expert Results Using a Hierarchical Cerebellum Parcellation Protocol For Multiple Inexpert Human Raters", NeuroImage, 2013 Jan 1;64:616-29.

19. Sznitman, Raphael; Richa, Rogerio; Taylor, Russell; jedynak, bruno; Hager, Gregory D. "Unified detection and tracking of instruments during retinal microsurgery", *IEEE PAMI, 2012 Oct 1*

20. R. Sznitman, A. Lucchi, P. I. Frazier, B. Jedynak and P. Fua "An Optimal Policy for Target Localization with Application to Electron Microscopy", *International conference on Machine Learning, 2013*

21. Alexander Crits-Christoph, Courtney K Robinson, Tyler Barnum, W Florian Fricke, Alfonso F Davila, Bruno Jedynak, Christopher P McKay and Jocelyne DiRuggiero, "Colonization patterns of soil microbial communities in the Atacama Desert", *Microbiome 1:28, 2013*

22. Bruno M. Jedynak, Bo Liu, Andrew Lang, Yulia Gel and Jerry L. Prince, "A computational method for computing an Alzheimer's Disease Progression Score; experiments and validation with the ADNI dataset", Neurobiology of Aging, in Press.

23. M. Bilgel, Y. An, A. Lang, J. Prince, L. Ferrucci, B. Jedynak, S. M. Resnick, "Trajectories of Alzheimer disease-related cognitive measures in a longitudinal sample", Alzheimer's & Dementia, In press.

24. Allison M. Murawski, Saumya Gurbani, Mariah Klunk, Laurent Younes, Sanjay K. Jain, and Bruno M. Jedynak, "Imaging the Evolution of Reactivation Pulmonary Tuberculosis in Mice Using ^{18}F-2-Fluoro-Deoxy-D-Glucose Positron Emission Tomography", Journal of Nuclear Medicine, In Press.

25. Jongho Kim, Andrew G. Horti, William B. Mathews, Vladimir Pogorelov, Heather Valentine, James R. Brasic, Daniel P. Holt, Hayden T. Ravert, Robert F. Dannals, Luwei Zhou, Bruno M. Jedynak, Atsushi Kamiya, Mikhail V. Pletnikov, Dean F. Wong, "Quantitative multimodal brain autoradiography of glutamatergic, dopaminergic, cannabinoid, and nicotinic receptors in mutant Disrupted-In-Schizophrenia-1 (DISC1) mice", Molecular Imaging & Biology, in press.

Publications in proceedings and book chapters:

1. D. Geman and B. Jedynak, "Detection of roads in SPOT satellite images," *Proc. International Geoscience and Remote Sensing Symposium, IGARSS '91*, Helsinski, Finland, June 1991.

2. B. Jedynak, A. Gagalowicz and M. Haindl, "Hierarchical Highway Recognition from Satellite Images," *Proc. Scandinavian Conference on Image Analysis SCIA'93*, Tromso, Norway, May 25-28, 1993.

3. D. Geman and B. Jedynak, "Shape recognition and twenty questions," *Proc. Reconnaissance des Formes et Intelligence Artificielle, RFIA '94*, 1, pp. 21-37, 1994.

4. B. Jedynak and J.P. Rozé, "Tracking roads in SPOT images by playing twenty questions," *Automatic Extraction of Man-Made Objects from Aerial and Space Images*, Birkhauseer (Basel) pp. 243-253, Monte-Verità, April 1995.

5. B. Jedynak and F. Fleuret, "Reconnaissance d'objets 3D à l'aide d'arbres de classification," *Proc. Image'Com 96*, pp. 25-30 Bordeaux, France, Mai 1996.

6. F. Jung, B. Jedynak and D. Geman, "Recognizing buildings in aerial images," *Automatic Extraction of Man-Made Objects from Aerial and Space Images*, II, Birkhauseer (Basel), pp. 173-182, Ascona, May 1997.

7. Y. Amit, D. Geman and B. Jedynak, "Efficient focusing and face detection," *Face Recognition: From Theory to Applications*, eds. H. Wechsler et al, NATO ASI Series F, Springer-Verlag, Berlin, pp. 157-173, 1998.

8. B. Jedynak, "Une comparaison entre stratégies locales et globales pour la construction d'arbres de classification," *Proc. Société Française de Statistique, SFDS'2000*, Fes, Maroco, Mai 15-19 2000.

9. M. Obeid, B. Jedynak and M. Daoudi, "Image Indexing and Retrieval Using Intermediate Features", *Proc. of the ninth ACM (Association for Computing Machinery) International Conference on Multimedia 2001*, pp. 531–533, Ottawa, Canada, September 30 - October 5 2001.

10. B. Jedynak, H. Zheng and M. Daoudi, "Maximum Entropy Models for Skin Detection", *Proc. Third Indian Conference On Computer Vision, Graphics and Image Processing, ICVGIP 2002*, pp. 276-281, Ahmedabad, India, December 16-18 2002,

11. B. Jedynak, H. Zheng and M. Daoudi, "Statistical Models for Skin Detection", IEEE Workshop on Statistical Analysis in Computer Vision, June 22 2003.

12. H. Zheng, M. Daoudi and B. Jedynak, "From Maximum Entropy to Belief Propagation: An application to Skin Detection", Proceedings of the British Machine Vision Conference (BMVC'04), September 7-9, 2004

13. B. Jedynak, C. Izard and C. Stark, "Automatic Landmarking of Magnetic Resonance brain Images", proceedings of the SPIE International Symposium on Medical Imaging, 12-17 February 2005, San Diego, California, USA.

14. B. Jedynak, S. Khudanpur and A. Yazgan, "Estimating Probabilities from Small Samples", proceedings of the 2005 Joint Statistical Meetings (JSM), August 7-11, 2005.

15. C. Izard, B. Jedynak, "Bayesian Registration for anatomical Landmark Registration", proceedings of the IEEE symposium on Biomedical Imaging: From Nano to Macro, ISBI'06, April 6-9 2006.

16. C. Izard, B. Jedynak, C. Stark, "Spline-Based Probabilistic Model for Anatomical Landmark Detection" , proceedings of MICCAI'06, 9(Pt 1), pp: 849-56. October 1-6, 2006.

17. B. Jedynak and D. Karakos, "Unigram Language Models using Diffusion Smoothing over Graphs", in Proceedings of the 2007 Workshop on Graph-based Methods for Natural Language Processing (TextGraphs-2), Rochester, NY, April 26, 2007.

18. C. Izard, B. Jedynak 'Statistical Deformable Model Applied to Anatomical Landmark Detection", Proceedings of the International Symposium on Biomedical Images, SPIE'08, February 16-21, 2008

19. C. Vidal, J. Hewitt, S.Davis, L. Younes, S. Jain and Bruno Jedynak, "Template Registration with Missing Parts: Application to the Segmentation of Tuberculosis Infected Lungs", Proceedings of the International Symposium on Biomedical Images, SPIE'09, April 13-17 2009.

20. C. Vidal, D. Beggs, L. Younes, S. K. Jain and B. Jedynak, "Incorporating User Input in Template-Based Segmentation" , proceedings of ISBI'11.

21. R. Sznitman, A. Basu, R Richa, James Handa, P. Gehlbach, B. Jedynak, R. H. Taylor, G. D. Hager, 'Unified Detection and Tracking in Retinal Microsurgery", proceedings of MICCAI 2011.

22. Bruno Jedynak, Bo Liu, Andrew Lang, Yulia Gel and Jerry Prince, 'A Time-Change Method for Computing an Alzheimer's Disease Progression Score, proceedings of NIBAD'2012 (workshop associated with MICCAI 2012)

23. Peter Frazier, Bruno M. Jedynak and Li Chen, "Sequential Screening: A Bayesian Dynamic Programming Analysis Of Optimal Group-Splitting", proceedings of the Winter Simulation Conference 2012.

Papers submitted, in revision, or in progress:

1. Zhou Ye, Runze Tang, Brian Caffo, Jerry Prince and Bruno Jedynak "Evaluation of the Alzheimer's Disease Progression Score". work in progress.

2. Weidong Han, Peter I. Frazier and Bruno M. Jedynak, "Twenty Questions for Localizing Multiple Objects by Counting: Bayes Optimal Policies for Entropy Loss". Submitted to IEEE Trans. on Information Theory. arXiv `http://arxiv.org/abs/1407.4446`

3. Heeyeon Im, Bruno Jedynak and Jonathan Flombaum, "Spatial object localization; a game of 20 questions perspective". Work in progress

4. Ehsan Jahangiri, Erdem Yoruk, Rene Vidal, Bruno Jedynak, Laurent Younes, and Donald Geman, "Entropy Pursuit for Scene Annotation". Work in progress

5. Bahman Afsari and Bruno Jedynak, "Statistical Clustering of the Knights in Shahnameh, the Book of the Kings", work in progress.

Recent Posters:

1. J. Vogelstein, K. Zhang, B. Jedynak and L. Paninski, "Inferring the Structure of Populations of Neurons using a Sequential Monte Carlo EM Algorithm", poster presented during the Computational and System Neuroscience Meeting (COSYNE'07), Salt Lake City, February 25-27, 2007.

2. M. Bilgel, Y. An, A. Lang, J. Prince, B. Jedynak, S. M. Resnick, "Temporal Sequence of Alzheimer's Disease-Related Cognitive Biomarker Changes in the Baltimore Longitudinal Study of Aging", Alzheimer's Association International Conference 2013, Alzheimer's Association, Boston, MA, July 13-18, 2013.

3. B. Jedynak, Z. Ye, A. Lang, R. Tang, C. P. Jedynak and J. Prince, "The Alzheimer's Disease Progression Score (ADPS) can predict the transition from MCI to AD", Alzheimer's Association International Conference 2013, Alzheimer's Association, Boston, MA, July 13-18, 2013.

4. S. Gurbani, J. S. Harper, L. Younes, S. K. Jain and B. Jedynak, "Spatial analysis of relapse in Mycobacterium tuberculosis-infected mice using co-registered PET and CT imaging", Third Annual Seminar on Molecular Imaging of Infectuous Diseases", JHU, Baltimore, September 23, 2013.

Other publications:

1. B. Jedynak, "Stratégies visuelles et jeu des 20 questions", *CNRS-INFO*, July 2000.

2. B. Jedynak, "Chercher une aiguille dans une botte de foin", *Publication IRMA* , 56-XII, December 2001.

Lectures:

1. Séminaire Imagerie et Mathématiques [Meeting: Image and Mathematics], Ecole Nationale Supérieure (ENS) Cachan, France, January 1994.

2. Journée Information et Traitement du Signal [Meeting: Information theory and Signal Processing], Ecole Nationale Supérieure des Télécommunications (ENST) Paris, France, November 10, 1995.

3. Réunion ORASIS, Journées Francophones des Jeunes Chercheurs en Vision par Ordinateur [Meeting: Young French Researcher in Computer Vision], Sophia-Antipolis, France, January 1995.

4. Réunion du Groupement de Recheche (GDR), Programme de Recherches Coordonnées (PRC) Communication Homme-Machine [Meeting: man-machine interaction], ENST Paris, France, July 1995.

5. Workshop on Probabilistic Algorithms and Algorithmic Probability, Utrecht, The Netherlands, May 29-30, 1996.

6. Réunion du GDR Information, Signal, Images et Vision (ISIS) Indexation Multimédia, [Meeting: Multimedia Indexing], ENST Paris, France, July 4, 1996.

7. Invited conference, Sydney International Statistical Congress, Sydney, Australia, July 8-12, 1996.

8. Weekly seminar, Statistics department, University of Chicago, Chicago, IL, February 10, 1997.
9. Weekly seminar, Statistics department, Stanford University, Stanford, CA, June 4, 1997.
10. Regular seminar, META 2,MEVAL,FRACTALES, Inria-Rocquencourt, February 5, 1998.
11. Regular seminar, GDR-ISIS Action Indexation Multimédia, ENST Paris, September 29, 1999.
12. Invited conference, 33 èmes Journées de Statistique [33'rd Annual Statistical Meeting], SFDS, Nantes, France, May 14, 2001.
13. Center for Imaging Science Seminar Series, JHU, November 13, 2001.
14. Regular seminar, équipe Statistique et Modèlisation Stochastique [Dept, Statistics and Stochastic Models], Institut d'Informatique et de Mathématiques Appliquées de Grenoble (IMAG) [Grenoble Institut of Computer Science and Applied Mathematics], Grenoble, France, February 7, 2002.
15. Center for Imaging Science Seminar Series, JHU, September 23, 2003.
16. Colloquium Series, Department of Statistics, The Florida State University, October 14, 2004.
17. Regular seminar, Department of Applied Mathematics and Statistics, JHU, February 10, 2005.
18. Invited talk. Joint Statistical Meeting. Nonparametric Approaches to Learning in Computer Vision and Image Understanding. Minneapolis, August 9, 2005
19. Statistics Colloquium. Department of Mathematics and Statistics, University of Maryland at Baltimore County, April 7, 2006
20. Center for Imaging Science Seminar Series, JHU, September 26, 2006.
21. Bio3 Seminar Series, Department of Biostatistics, Bioinformatics, and Biomathematics, Georgetown University Medical Center, October 6, 2006.
22. CLSP, JHU, regular seminar, February 13th, 2007.
23. Food and Drug Administration, Center for Drug Evaluation and Research, Visiting Professor Lecture Series, January 22, 2009.
24. Regular Seminar, Dept. of Applied Mathematics and Statistics, JHU, December 2, 2010.
25. Applied Mathematics Colloquia, Cornell University, January 28, 2011.
26. Workshop "Mathematical Optimization and Mathematical Theory of Perception", La Londe Les Maures, Var, France, June 2011.
27. Seminar "Mathematics and image", University of Paris Jussieu, july 2011.
28. Neuroscience 2011 Conference, Washington D.C., November 16, 2011.
29. Pfizer Inc. , Invited talk, January 2012.
30. Johnson & Johnson, Invited talk, January 2012.
31. Alzheimer's Association International Conference, accepted abstract, July 2012
32. Joint Statistical Meeting, accepted abstract and invited presentation, August 2012.

33. Colloquium du département de Mathématiques et Informatique, Université Paris Descartes, January 11, 2013.

34. Séminaire du laboratoire Psychologie de la Perception, Université Paris Descartes, January 24, 2013.

35. IPAM Summer School in Computer Vision, invited tutorial, UCLA, Los angeles, July 31, 2013.

36. Third annual seminar on Molecular Imaging of Infectious Diseases, invited talk, JHU, September 23, 2013

37. Thèse d'habilitation à diriger des recherches. USTL, Lille. France, Mai 27, 2014.

38. Joint Statistical Meeting, invited presentation, August 2014.

39. Modelling and Optimization: Theory and Application (MOPTA 2014), invited presentation, August 2014.

40. Regular seminar, department of Applied Mathematics & Statistics, JHU, October 2^{nd} 2014.

41. Dementia Consortium, JHU School of Medicine, October 20^{th} 2014.

42. Maseeh Colloquium, Portland State university, January 7, 2015.

Professional societies:

⋆ Société Française de Statistique (SFDS) [French Statistical Society].

⋆ Société des Mathématiques Appliquées et Industrielles (SMAI) [French Applied and Industrial Mathematics Society].

⋆ IEEE Computer Society.

⋆ American Statistical Association

Recent and current participation in Grants as PI, coPI or senior personnel:

(PI: B. Jedynak) 2008-2009
1. Potts Memorial Fundation
Quantitative Imaging Methods for the Discovery of Surrogate Markers of M. tuberculosis Infection

(PI: B. Jedynak) 2008-2010
2. Allocation Grant from Bill and Melinda Gates Foundation Grant
Quantitative Imaging Methods for Tuberculosis

(PI: B. Jedynak) 2010-2012
3. Allocation Grant from NIH Grant PI: Sanjay Jain
Quantitative Imaging Methods for Tuberculosis

(PI: B. Jedynak) 2012-2015
4. Allocation Grant from NIH Grant PI: Sanjay Jain
Molecular Imaging for Macrophage-Associated Pulmonary Diseases

(PI: B. Jedynak) 2010-2011
5. Research grant from Pfizer Inc.
Modeling of Alzheimer's disease Neuro-imaging Initiative Study

(PI: B. Jedynak) 2011-2012

6. Ossoff scholar award
   Developing the Alzheimer's Disease Progression Scale (ADPS) and further characterizing the course of AD

(PD: R. Winslow) 2007-2010

7. NIH 1R24 HL08534301A1
   CardioVascular Research Grid (CVRG)

(PI: J.L. Prince) 2006 - 2016

8. NIH/NINDS 1 R01 NS056307
   Automatic Cerebellar MRI Labeling in Health and Disease

(PI:J. DiRuggiero) 2009-2011

9. NSF Award 0842636
   Community structure, genomic heterogeneity and metabolic diversity of the microbiome of the oldest and driest desert on Earth, the Atacama Desert in Northern Chile

(PI:D. Geman) 2010-2014

10. *Active Scene Interpretation by Entropy Pursuit*

(PI:J. Flombaum) 2013-2015

11. Science of Learning Institute, Johns Hopkins University
    Spatial Localization through Learning: An Information Theoretic Approach

(PI: B. Jedynak) 2014-2015

12. M.J. Fox Foundation
    A machine learning analysis of the progression of Parkinson Disease

(PI: J.L. Prince) 2014 - 2018

13. NIH/NEI 1 R01 EY024655-01
    3D segmentation and registration of macular SD-OCT for application in MS.

Postdoc Advising and Co-advising:

Camille Vidal, September 2008-September 2009. Now full time employee of the Food and Drug Administration.

PhD. Advising and Co-advising:

1. Huicheng Zheng, "Maximum entropy modeling for skin detection: With an application to Internet filtering", December 2001- November 8, 2004, Computer Science, USTL, France. Now Associate Professor at the School of Information Science and Technology, Sun Yat-Sen University.

2. Camille Vidal, born Izard, "Automatic Landmarking of Magnetic Resonance brain Images", September 2004 - June 2007, Mathematics, USTL, France. See above for her current affiliation.

3. Joshua Vogelstein, "Uncovering Neuromechanisms of the Dorsal Cochlear Nucleus", Neurosciences, JHU, September 2006-December 2009. Now Assistant Professor at JHU in Biomedical Engineering.

4. Raphael Sznitman, September 2008 - September 2011, Computer Science, JHU. Now Assistant Professor at the University of Bern.

5. Andrew Lang, January 2011 - present, Electrical and Computer Engineering, JHU.
6. Lee Chen, September 2013 - January 2014, Applied Mathematics and Statistics, JHU. Now under the supervision of Carey Priebe.
7. Ehsan Variani, January 2014 - present, Electrical and Computer Engineering, JHU.

Master's Advising:

1. Ivan Keller, Statistics, Paris XI, Spring 1994.
2. Mohamed Obeid, Computer Science, USTL, Spring 2001.
3. Didier Barret, Computer Science, USTL, Spring 2002.
4. Rhanem Jbilat, Applied Mathematics, USTL, Spring 2003.
5. Camille Vidal, born Izard, USTL, Spring 2004.
6. Neeraja Penumetcha, Biomedical Engineering, JHU, 2005-2006.
7. Raphael Sznitman, Computer Sciences, JHU, 2008.
8. Saumya Gurbani, Biomedical Engineering, JHU, September 2012 - July 2013.
9. Han Weidong, Applied Mathematics and Statistics, JHU, January 2013 - June 2014.
10. Zhou Ye, Applied Mathematics and Statistics, JHU, January 2013 - June 2014.
11. Fan Zhou, Applied Mathematics and Statistics, JHU, September 2013 - present.
12. Qingfeng Hu, Applied Mathematics and Statistics, JHU, January 2014 - present.

Thesis advising committees

1. Hailiang Huang, BME, JHU, 2006-January 2012.
2. Joshua Vogelstein, "Uncovering Neuromechanisms of the Dorsal Cochlear Nucleus", Neurosciences, JHU, September 2006-December 2009.
3. Murat Bilgel, BME, current.

Reviewing journal papers:

1. Annales des Télécommunications.
2. Ecological Modelling.
3. IEEE transactions on Pattern Analysis and Machine Intelligence.
4. IEEE Transactions on Image Processing.
5. Journal of Machine Learning Research.
6. Journal of the Royal Statistical Society.
7. Neural Computation.
8. Pattern Recognition.
9. Statistics and Probability Letters.

Member of the Program Committee:

1. CVPR 2008
2. ICCV 2009
3. Workshop: "Information Theory in Computer Vision and Pattern Recognition" ICCV 2011
4. Chairman for Session 753 "Data analysis and Statistics IV", Neuroscience 2011
5. ECCV 2014
6. Chairman for session 347 "New Approaches Toward Understanding Brain Connectivity", JSM 2014

Reviewing grant proposal:

1. NSF Computer Vision panel
2. Swiss National Science Foundation
3. Fonds de la Recherche Scientifique (Belgium)
4. Human Brain Project (European Commission, Seventh Framework Program)

Teaching:

1. Calculus I, UMASS at Amherst, Spring 1992.
2. Calculus I, Graphs, Linear algebra, Probabilities, Statistics and Logic, Université Paris V, Fall 1995 and Spring 1996.
3. Calculus I-II, Graph theory, Linear algebra, Probabilities, Statistics, Logic, IUT A, USTL, September 1997 to June 2003.
4. Information Theory for Image Processing and Computer Vision, Dept. of Mathematics, USTL, Spring 2002 and 2003.
5. Probability and Statistics, (550.310 and 550.311), AMS, JHU. Spring and Summer 2005 and 2006, Fall 2007, 2008, 2009, 2010 and 2014.
6. Statistical Methods in Imaging, (580.466 and 550.431), Dept. of Biomedical Engineering and AMS, JHU, Spring 2006, 2007, 2010,2011, and 2012.
7. Data Mining (550.461) AMS, JHU, Fall 2007, 2008, 2009, 2010, 2011, 2012, 203 and 201.
8. Introduction to Statistics (550.430), AMS, JHU, Spring 2007, 2008 and 2009.
9. 550.211 Statistics for the Life Sciences, Spring 2011,2012, 2013 and 2014.
10. Statistical Theory II (550.631) Spring 2014.

Skills:

- ⋆ Languages: French (native), fluent English, some Spanish.
- ⋆ Computers skills: C,C++,Unix,LaTeX, Mupad, Mathematica, Matlab, R.
- ⋆ Musical skills: active practice of djembe, congas and drums.