

## CURRICULUM VITAE

**DATE PREPARED:** January 2, 2008

### **PART I: General Information**

**Name:** Kilian Maria Pohl

**Home Address:** 130 Baldwin Street

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**Office Address:** Brigham and Women's Hospital  
Department of Radiology  
75 Francis St  
Boston, MA 02115 United States

**Phone:** (831) 246-3250

**Email:** pohl@bwh.harvard.edu

**Place of Birth:** Darmstadt, Germany

#### **Education:**

1999 M.SC. (Mathematics), Summa cum laude, University of Karlsruhe  
2005 PH.D. (Computer Science), Massachusetts Institute Of Technology

#### **Postdoctoral Training:**

06/05-09/05 Postdoctoral Associate, Medical Vision, Massachusetts Institute of Technology  
10/05-09/06 Research Fellow, Medical Vision, Harvard Medical School

#### **Academic Appointments:**

2005-2006 Research Fellow in Radiology, Radiology-Brigham and Women's Hospital, Harvard Medical School  
2006- Instructor of Radiology, Radiology-Brigham and Women's Hospital, Harvard Medical School

#### **Other Professional Positions and Major Visiting Appointments:**

1998-1999 Research Assistant, Department of Computer Science, University of Karlsruhe, Karlsruhe, Germany  
1999-2000 Technical Consultant, Propack Data Corporation, Cary, NC  
2000-2001 Training Manager, Propack Data Corporation, Cary, NC  
2001-2005 Research Associate, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA  
2005- Research Affiliate, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Boston, MA  
2005-2007 Consultant, Isomics, Cambridge, MA

## **Major Committee Assignments:**

### **International**

2007-2008 Ninth IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image, Other

### **Editorial Boards:**

2005- Reviewer, NeuroImage  
2005- Reviewer, IEEE Transactions on Medical Imaging  
2005- Reviewer, International Conference on Medical Image Computing and Computer Assisted Intervention  
2006- Reviewer, Medical Image Analysis  
2007- Reviewer, Journal of Magnetic Resonance Imaging  
2007- Reviewer, IEEE Transactions on Image Processing

### **Awards and Honors:**

1996-1997 Scholastic Award for study in the United States, State of Baden-Wuerttemberg, Germany  
2004 Student Award, IEEE International Symposium on Biomedical Imaging  
2007 Best Paper Prize, Medical Image Analysis-MICCAI 06

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## Part II: Research, Teaching, and Clinical Contributions

### B. Funding Information

- 2005-2007 Co-P.I., Foundation, Meningioma Tracking Project
- 2007-2010 Investigator, N.I.H., 1R01AA016748-01, Measuring Alcohol and Stress Interaction
- 2007-2008 P.I., Foundation, Meningioma Tracking Project

### D. Report of Teaching

#### 1. Local contributions

##### c. Local Invited Presentations

###### Seminar

- 2004- Anatomical Guided Segmentation with Non-Stationary Tissue Class Distributions in an Expectation-Maximization Framework, Brigham and Women's Hospital - Surgical Planning Lab
- 2005- Prior Information for Brain Parcellation, Brigham and Women's Hospital - Surgical Planning Lab
- 2007- Monitoring Brain Tumor Growth, Brigham and Women's Hospital - The Image Guided Therapy Prostate Group

##### e. Advisory and Supervisory Responsibilities in Clinical or Laboratory Setting

- 2007- 1 Graduate Student for 100 hrs/year, Mentoring Research , INRIA - Sophia Antipolis, France

#### 2. Regional, national, or international contributions

##### a. Invited Presentations

###### Regional

- 2005- Combining Registration and Segmentation to Analyze Medical Images, The Stochastic Systems Group Seminar, Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, Cambridge, MA *[Seminar]*
- 2006- A Shape Representation based on the Logarithm of Odds, The Stochastic Systems Group Seminar, Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, Cambridge, MA *[Seminar]*

###### National

- 2000- Batch-Tracing Report, The International Society for Pharmaceutical Engineering, Arlington, VA *[Plenary Presentation]*
- 2004- Anatomical Guided Segmentation with Non-Stationary Tissue Class Distributions in

an Expectation-Maximization Framework, ISBI 2004: IEEE International Symposium on Biomedical Imaging, Arlington, VA [*Plenary Presentation*]

- 2006- A Shape Representation based on the Logarithm of Odds, Vision Seminar, Stanford Vision Science and Neuroimaging Group, Stanford University, Stanford, CA [*Seminar*]
- 2006- Automatic Segmentation of Medical Images, Vision Seminar, IBM Almaden Research Center, San Jose, CA [*Seminar*]
- 2007- A Hierarchical Segmentation Algorithm for MR Brain Images, Center for Computational Biology, University of California - Los Angeles, CA [*Seminar*]
- 2007- Solving the Mean Field Approximation in the Level Set Framework via the Logarithm of Odds, Image Processing Seminar, Institute for Pure & Applied Mathematics, University of California - Los Angeles, CA [*Invited Lecture*]
- 2007- Automatic Segmentation of MR Brain Images, Radiology Sciences Laboratory, Stanford, CA [*Seminar*]
- 2007- Incorporating Prior Information into Automatic MR Brain Segmentation, University of California - San Francisco, CA [*Seminar*]
- 2007- Representing Uncertainty via the Logarithm of Odds, University of California - Santa Cruz, CA [*Invited Lecture*]

### **International**

- 2002- Incorporating Non-Rigid Registration into Expectation Maximization Algorithm to Segment MR Images, MICCAI'2002: Fifth International Conference on Medical Image Computing And Computer Assisted Intervention, Tokyo, Japan [*Plenary Presentation*]
- 2006- Logarithm odds maps for shape representation, MICCAI'2006: Ninth International Conference on Medical Image Computing And Computer Assisted Intervention, Copenhagen, Denmark. [*Plenary Presentation*]
- 2007- Active Mean Fields: Solving the Mean Field Approximation in the Level Set Framework, IPMI 2007: Information Processing in Medical Imaging, Kerkrade, Netherlands [*Plenary Presentation*]
- 2007- Solving the Mean Field Approximation in the Level Set Framework via the Logarithm of Odds, Institute for Mathematics, University of Lübeck, Germany [*Seminar*]
- 2007- Solving the Mean Field Approximation in the Level Set Framework via the Logarithm of Odds, l'Institut National de Recherche en Informatique et en Automatique, Sophia Antipolis, France [*Seminar*]

### **b. Professional Leadership Roles related to Teaching**

- 1995-1996 International Department of Mathematics, University of Karlsruhe, Germany  
Advanced Calculus: Teaching Assistant; graded assignments

- 1996 International Department of Mathematics, University of Karlsruhe, Germany  
Introductory Calculus: Teaching Assistant; developed and taught weekly tutorials, graded assignments
- 2000-2001 National Propack Data Corporation  
Training Manager; Established and supervised US training division; Developed training for Good Manufacturing Practices for FDA compliance in the pharmaceutical industry; trained partners, and customers including Merk, Pfizer, and Roche
- 2004-2005 Regional Massachusetts Institute of Technology  
Mathematics for Computer Science: Teaching assistant; taught weekly recitation and tutorials, prepared course materials and graded examinations
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## Part III: Bibliography

### Original Articles

1. Pohl KM, Fisher J, Grimson WE, Kikinis R, Wells WM. A Bayesian model for joint segmentation and registration. *NeuroImage*. 2006;31(1):228-39.
2. Koo MS, Dickey CC, Park HJ, Kubicki M, Ji NY, Bouix S, Pohl KM, Levitt JJ, Nakamura M, Shenton ME, McCarley RW. Smaller neocortical gray matter and larger sulcal cerebrospinal fluid volumes in neuroleptic-naive women with schizotypal personality disorder. *Archives of General Psychiatry*. 2006;63(10):1090-100.
3. Pohl KM, Bouix S, Nakamura M, Rohlfing T, McCarley RW, Kikinis R, Grimson WE, Shenton ME, Wells WM. A hierarchical algorithm for MR brain image parcellation. *IEEE Transactions on Medical Imaging*. 2007;26(9):1201-12.
4. Nakamura M, Salisbury DF, Hirayasu Y, Bouix S, Pohl KM, Yoshida T, Koo MS, Shenton ME, McCarley RW. Neocortical gray matter volume in first-episode schizophrenia and first-episode affective psychosis: a cross-sectional and longitudinal MRI study. *Biological Psychiatry*. 2007;62(7):773-83.
5. Pohl KM, Fisher J, Bouix S, Shenton M, McCarley RW, Grimson WE, Kikinis R, Wells WM. Using the logarithm of odds to define a vector space on probabilistic atlases. *Medical Image Analysis*. 2007;11(5):465-77.

### Proceedings of Meetings

1. Rogalla O, Pohl KM, Dillmann R. A general approach for modeling robots. In: *IROS 2000: IEEE/RSJ International Conference on Intelligent Robots and Systems*; Takamatsu, Japan. Piscataway (NJ): IEEE;2000. p. 1963 - 1968.
2. Pohl KM, Wells WM, Guimond A, Kasai K, Shenton ME, Kikinis R, Grimson WEL, Warfield SK. Incorporating Non-Rigid Registration into Expectation Maximization Algorithm to Segment MR Images. In: *MICCAI 2002: Fifth International Conference on Medical Image Computing and Computer Assisted Intervention*; Tokyo, Japan. Berlin / Heidelberg: Springer;2002. p. 564-572.
3. Pohl KM, Bouix S, Kikinis R, Grimson WEL. Anatomical Guided Segmentation with Non-Stationary Tissue Class Distributions in an Expectation-Maximization Framework. In: *ISBI 2004: IEEE International Symposium on Biomedical Imaging: From Nano to Macro*; Arlington, VA. Piscataway (NJ): IEEE;2004. p. 81-84.
4. Pohl KM, Warfield SK, Kikinis R, Grimson WEL, Wells WM. Coupling Statistical Segmentation and PCA Shape Modeling. In: *MICCAI 2004: Seventh International Conference on Medical Image Computing and Computer Assisted Intervention*; Saint-Malo, France. Berlin / Heidelberg: Springer;2004. p. 151-159.
5. Pohl KM, Fisher J, Levitt JJ, Shenton ME, Kikinis R, Grimson WE, Wells WM. A unifying approach to registration, segmentation, and intensity correction. In: *MICCAI 2005: Eighth International Conference on Medical Image Computing and Computer Assisted Intervention*; Palm Springs, CA. Berlin / Heidelberg: Springer;2005. p. 310-318.
6. Pohl KM, Fisher J, Kikinis R, Grimson WEL, Wells WM. Shape Based Segmentation of Anatomical Structures in Magnetic Resonance Images. In: *CVBIA 2005: Computer Vision for Biomedical Image Applications: Current Techniques and Future Trend, An International Conference on Computer Vision Workshop*; Beijing, China. Berlin / Heidelberg: Springer;2005. p. 489-498.
7. Pohl KM, Fisher J, Shenton M, McCarley RW, Grimson WE, Kikinis R, Wells WM. Logarithm

- odds maps for shape representation. In: MICCAI 2006: Ninth International Conference Medical Image Computing and Computer-Assisted Intervention; Copenhagen, Denmark. Berlin / Heidelberg: Springer;2006. p. 955-63.
8. Pohl KM, Kikinis R, Wells WM. Active mean fields: solving the mean field approximation in the level set framework. In: IPMI 2007: Information Processing in Medical Imaging; Kerkrade, Netherlands. Berlin / Heidelberg: Springer;2007. p. 26-37.
  9. Zöllei L, Shenton M, Wells WM, Pohl KM. The Impact of Atlas Formation Methods on Atlas-Guided Brain Segmentation. In: Statistical Registration: Pair wise and Group-wise Alignment and Atlas Formation Workshop at MICCAI 2007: Tenth International Conference on Medical Image Computing and Computer-Assisted Intervention; Brisbane, Australia. Berlin / Heidelberg: Springer;2007. p. 39 - 46.
  10. Vosburgh KG, Stoll J, Noble V, Pohl KM, Estepar RSJ, Takacs B. Image Registration Assists Novice Operators in Ultrasound Assessment of Abdominal Trauma. In: MMVR16: Medicine Meets Virtual Reality 16, Studies in Health Technology and Informatics; Long Beach, CA. Netherlands: IOS Press;2008. p. .

### **Thesis**

1. Kilian Pohl. Modellierung von Manipulationssystemen. Karlsruhe, Germany: University of Karlsruhe;1998.
2. Kilian Pohl. Prior Information for Brain Parcellation. Cambridge, MA: Massachusetts Institute of Technology;2005.

### **NonPrint Materials**

1. Pohl KM, Fisher J, Grimson WEL, Wells WM. An Expectation Maximization Approach for Integrated Registration, Segmentation, and Intensity Correction. Cambridge, MA: CSAIL Publications - Artificial Intelligence Series Publications;2005.AIM-2005-010, pp. 1 - 13.
2. Pohl KM, Bouix S, Shenton ME, Grimson WEL, Kikinis R. Automatic Segmentation Using Non-Rigid Registration. In short communications of MICCAI 2005: Eighth International Conference on Medical Image Computing and Computer Assisted Intervention;2005.

### **Abstracts**

1. Wu Y, Pohl KM, Warfield SK, Guttmann CRG. Automated Segmentation of Cerebral Ventricular Compartments. ISMRM 2003: International Society for Magnetic Resonance in Medicine Eleventh Scientific Meeting and Exhibition. 2003.
2. Pohl KM, Timoner S, Kikinis R, Grimson WEL. Modeling Shape in a Self-Adaptive Segmentation Algorithm. HBM 2004: Tenth Annual Meeting of the Organization for Human Brain Mapping, 2004.