

# Ja-Yeon Jeong

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## School Address

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## OBJECTIVE

Position in statistical research and applications that will effectively utilize my mathematical background, programming skills, and experience in research and development

## EDUCATION

### University of North Carolina at Chapel Hill

Ph.D., *Computer Science*, expected December 2008  
Dissertation Topic: Statistical Shape Analysis of Multiple Anatomical Objects  
Primary Advisor: Dr. Stephen M. Pizer

### University of Nebraska-Lincoln

M.S., *Mathematics*, May 2001

### Pohang University of Science and Technology, Pohang, Korea

B.S., *Mathematics*, Feb 1998

## WORK EXPERIENCE

### Medical Image Display & Analysis Group (MIDAG)

June 2003 - Present

Department of Computer Science, UNC-CH

*Research Assistant*

- Developed a new method that stably estimates a conditional distribution of shape of an object given in its neighboring objects when the feature space of shape of objects is very high dimensional, whereas the samples are limited. The method is based on principal component regression and is implemented in Matlab for a shape representation derived from medial geometry.
- Worked in close collaboration with professors in Statistics and Biostatistics in the development of a quality measure that allows the evaluation of the effectiveness of an estimated shape probability distribution in terms of its predictive power
- Provided programming support to group members and research staff

### Department of Computer Science UNC-CH

*Teaching Assistant*

August 2002 - May 2003

- Assisted in a formal computation theory course, making homework-solution sets, grading assignments and tutoring individual students.

*Research Assistant*

August 2001 - May 2002

- Worked in the development of an user-interface between haptic (force-feedback) display and magnetic force microscope.

### Department of Mathematics and Statistics, UNL

*Instructor*

August 2000 - May 2001

- Taught non-science major students college algebra. Bore full responsibility for giving lectures, making assignments, designing examinations, and giving grades for the classes about 30 students.

*Teaching Assistant*

August 1999 - May 2000

- Assisted in an advanced calculus course, grading assignments and teaching tutorial sessions.

## HONORS

**Honorable Mention Best Poster Award**, SPIE Medical Imaging, 2008

**Outstanding First Year Student Award**, University of Nebraska-Lincoln, July 2001

## PUBLICATIONS

### JOURNAL ARTICLES

“Statistical Multi-object Shape Models”, C. Lu, S. M. Pizer, S. Joshi, **Ja-Yeon Jeong**, *International Journal of Computer Vision (IJCV)*, vol. 75, no. 3, pp. 387-404, 2007.

### PEER REVIEWED CONFERENCE PROCEEDINGS

“Conditional-Mean Initialization Using Neighboring Objects in Deformable Model Segmentation”, **Ja-Yeon Jeong**, J. V. Stough, J. S. Marron, and S. M. Pizer, *SPIE Medical Imaging*, February 2008

“A Large-to-Fine-Scale Shape Prior for Probabilistic Segmentations Using a Deformable M-rep”, Xiaoxiao Liu, **Ja-Yeon Jeong**, J. H. Levy, R. Saboo, E. L. Chaney, and S. M. Pizer, To appear in *IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA)*, 2008

“Statistical Shape Analysis of Multi-Object Complexes”, K. Gorczowski, M. Styner, **Ja-Yeon Jeong**, J. S. Marron, J. Piven, H. C. Hazlett, S. M. Pizer, and G. Gerig, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 1-8, June 2007

“Discrimination Analysis using Multi-object Statistics of Shape and Pose”, K. Gorczowski, M. Styner, **Ja-Yeon Jeong**, J. S. Marron, J. Piven, H. C. Hazlett, S. M. Pizer, and G. Gerig, *SPIE Medical Imaging*, vol. 6512, pp. 1-8, 2007.

“Statistics on Anatomic Objects Reflecting Inter-Object Relations”, **Ja-Yeon Jeong**, S. M. Pizer, and S. Ray, *MICCAI Workshop on Mathematical Foundations of Computational Anatomy*, October 2006.

“Intra-Patient Anatomic Statistical Models for Adaptive Radiotherapy”, S. M. Pizer, R. E. Broadhurst, **Ja-Yeon Jeong**, Q. Han, R. Saboo, J. Stough, G. Tracton, E. L. Chaney, *MICCAI Workshop From Statistical Atlases to Personalized Models: Understanding Complex Diseases in Populations and Individuals*, October 2006

“Multi-figure Anatomical Objects for Shape Statistics”, Q. Han, S. M. Pizer, D. Merck, S. Joshi, **Ja-Yeon Jeong**, *Information Processing in Medical Imaging (IPMI)*, LNCS 3565, pp. 701-712, July 2005.

“Estimating the Statistics of Multi-Object Anatomic Geometry Using Inter-Object Relationships”, S. M. Pizer, **Ja-Yeon Jeong**, C. Lu, K. Muller, S. Joshi, *International Workshop on Deep Structure, Singularities and Computer Vision (DSSCV)*, LNCS 3753, pp. 60-71, June 2005.

“Deep Structure of Images in Populations via Geometric Models in Populations”, S. M. Pizer, **Ja-Yeon Jeong**, R. E. Broadhurst, S. Ho, J. V. Stough, *International Workshop on Deep Structure, Singularities and Computer Vision (DSSCV)*, LNCS 3753, pp. 49-59, June 2005.

## SKILLS

<i>Statistical Software</i>	Matlab, SAS, S-plus
<i>Programming Language</i>	Matlab, C/C++, Java, perl, ML
<i>Packages</i>	OpenGL, Fast Light GUI Toolkit (FLTK)
<i>Document Preparation</i>	L <sup>A</sup> T <sub>E</sub> X, Microsoft Office applications
<i>Software Management</i>	Subversion (svn)
<i>Operating System</i>	Windows, Unix/Linux

## SERVICE

Meeting coordinator, weekly seminar on *Shape Statistics & Medial Geometry*

Spring 2007 - Present  
MIDAG, UNC-CH

- Include organizing presentations of graduate students and professors from Computer Science, Statistics, Biostatistics, and Mathematics departments in addition to maintaining a website for the seminar.