

# Xiaopeng Xi

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## EDUCATION

- **Ph.D. Computer Science** June 2007  
University of California, Riverside Major in Data Mining and Machine Learning
- **M.S. Computer Science** June 2003  
Nanjing University, China.
- **B.S. Mathematics** June 2000  
Nanjing University, China.

## SKILLS

### Programming languages

- Proficient in C/C++, Visual C++, MATLAB, OpenCV
- Working experience in Java, OpenGL, MFC, STL, SQL, Perl

### Operating systems

- Windows, Unix

## EXPERIENCE

**Research Assistant** Database lab, UCR Sep. 2003 – Jun. 2007

- Fast Time Series Classification
  - Proposed a novel technique of combining k-nearest-neighbor classifier (KNN) with data pruning, under the distance measure (Dynamic Time Warping).
  - Implemented and compared with traditional algorithms, e.g. decision tree, neural networks, Bayesian classifiers, on 13 high-dimensional time series data sets.
  - Programming language/software: C++, MATLAB.
- Anytime Classification with Application in Stream Mining
  - Proposed a framework to convert KNN classifier into an anytime algorithm with ranking heuristics.
  - Conducted experiments on ten massive datasets as well as two industrial applications: real-time fish monitoring, insects classification in video streams (collaborated with *ISCA Tech.*)
  - Programming language/software: C++, MATLAB
- Exact Image Indexing and Shape Motif Discovery
  - Proposed a fast exact indexing technique of massive image datasets under shape rotation invariance.
  - Designed a hierarchical-tree based lower bounding method to accelerate search/indexing.
  - Implemented data dimensionality-reduction method using Symbolic Approximation (SAX).
  - Programming language/software: C++, MATLAB
- Data Visualization
  - Proposed a novel visualization framework to represent file contents by intelligent icons.
  - Designed and implemented similarity/dissimilarity distance function and clustering method of icons.
  - Conducted experiments on DNA, text files and Space Shuttle Telemetry data sets.
  - Programming language/software: C++, Java, MATLAB

**Intern** *ISCA Entomological Technologies*

- Real-time Mosquito Identification and Tracking July 2006 – Aug. 2006
  - Proposed texture feature extraction method with PCA in mosquito species and sex classification.
  - Designed Markov-Chain Monte Carlo (MCMC)-based particle filtering for mosquito tracking.
  - Programming language/software: C++, Visual C++, OpenCV
- Real-time Insects Classification and Tracking July 2005 – Aug. 2005

- Collaborative designed insects feature extraction methods.
- Implemented insect tracking using mixture particle filters.

**Teaching Assistant**                      CS Department, UCR    Sep. 2003 – June 2005

- Supervised weekly labs, taught object-oriented programming in C++ and data structures.

**Software Developer**    VHSOFT Technologies Co., Ltd, China    Sep. 2000 – June 2003

- Participated in developing the commercial software VHSOFT to automatically recognize electrical architectural drawings.
- Implemented document understanding algorithms and designed software GUI.

## SELECTED PUBLICATIONS

- **X. Xi**, E. Keogh, L. Wei and A. Mafra-Neto. [Finding Motifs in Database of Shapes](#). *SIAM International Conference on Data Mining (SDM)*, 2007.
- D. Yankov, E. Keogh, L. Wei, **X. Xi** and W. Hodges. [Fast Best-Match Shape Searching in Rotation Invariant Metric Spaces](#). *SIAM International Conference on Data Mining (SDM)*, 2007.
- L. Wei, E. Keogh, **X. Xi**, S.H. Lee. [Supporting Anthropological Research with Efficient Rotation Invariant Shape Similarity Measure](#). *Journal of the Royal Society Interface (J.R. Soc. Interface)*, 2006.
- **X. Xi**, E. Keogh, C. Shelton, L. Wei, C.A. Ratanamahatana. [Fast Time Series Classification Using Numerosity Reduction](#). *In Proc. of International Conference on Machine Learning (ICML)*, 2006.
- K. Ueno, **X. Xi**, E. Keogh, D.J. Lee. [Anytime Classification Using the Nearest Neighbor Algorithm with Applications to Stream Mining](#). *In Proc. of International Conference on Data Mining (ICDM)*, 2006.
- L. Wei, E. Keogh, **X. Xi**. [SAXually Explicit Images: Finding Unusual Shapes](#). *In Proc. of International Conference on Data Mining (ICDM)*, 2006.
- E. Keogh, L. Wei, **X. Xi**, S. Lonardi, J. Shieh, S. Sirowy. [Intelligent Icons: Integrating Lite-Weight Data Mining and Visualization into GUI Operating Systems](#). *In Proc. of International Conference on Data Mining (ICDM)*, 2006.
- E. Keogh, L. Wei, **X. Xi**, S.H. Lee and M. Vlachos. [LB\\_Keogh Supports Exact Indexing of Shapes under Rotation Invariance with Arbitrary Representations and Distance Measures](#). *In Proc. of International Conference on Very Large Data Bases (VLDB)*, 2006.

## HONORS AND REWARDS

- Student Travel Grant for SDM 2007
- Student Travel Grant for ICML 2006
- Huawei Scholarship, 2003
- Outstanding Undergraduate student of Nanjing University (<3%), 2000
- Outstanding student leader of Nanjing University (<1%), 2000

## PRESENTATIONS

- Fast Time Series Classification Using Numerosity Reduction, presented at ICML 2006.

## REVIEWER

- TKDD'07, SIGKDD'06, ECML/PKDD'06, ADMA'06, CBMS'06

References available upon request