Ayesha Choudhary

CONTACT

Department of Computer Science and Engineering
Indian Institute of Technology Delhi
Hauz Khas, New Delhi 110016, India.
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EDUCATION

Indian Institute of Technology Delhi, New Delhi, India.

Research Scholar (Thesis submitted)
Department of Computer Science and Engineering, July 2003 - July 2010

- CGPA: 9.0/10.0
- Thesis Title: **Automated Analysis of Surveillance Videos**
- Advisors: **Prof. Subhashis Banerjee** (Dept. of Comp. Sc. & Engg.) and **Prof. Santanu Chaudhury** (Dept. of Elec. Engg.)

Indian Institute of Technology Delhi, New Delhi, India.

M.Tech., Computer Applicationsg, December 2001.

- C.G.P.A : 8.579/10.0
- Project Title: **Computation of Euclidean Parameters from Projective Reconstruction**
- Advisors: **Prof. J. B. Srivastava** (Dept. of Mathematics) and **Prof. Subhashis Banerjee** (Dept. of Comp. Sc. & Engg.)

Indian Institute of Technology Delhi, New Delhi, India

M.Sc. Mathematics, May 2000.

- CGPA: 9.032/10.0
- Project Topic: **Linear Programming and Matrix Games in Fuzzy Environment**
- Advisors: **Prof. Suresh Chandra** (Dept. of Mathmatics) and **Dr. Wagish Shukla** (Dept. of Mathmatics)

Delhi University, New Delhi, India

B.A. (Honors) Mathematics, July 1998.

- Percentage: 77%

RESEARCH
INTERESTS

Computer Vision, Machine Learning, Image Processing, Artificial Intelligence, Computer Graphics, Optimization, Linear Algebra, Fuzzy Theory and Applications.

PUBLICATIONS

1. *"Distributed Calibration of a Pan-Tilt Camera Network using Multi-layered Belief Propagation"*, Ayesha Choudhary, Gaurav Sharma, Santanu Chaudhury and Subhashis Banerjee. In Proceedings of the First IEEE Workshop on Camera Networks, in conjuntion with the Twenty third IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2010), San Francisco, USA, June 2010.

2. *"A Framework for Analysis of Surveillance Videos"*, Ayesha Choudhary, Santanu Chaudhury and Subhashis Banerjee. In Proceedings of the 2008 Sixth indian Conference on Computer

Vision, Graphics & Image Processing (December 16 - 19, 2008). ICVGIP. IEEE Computer Society, Washington, DC, 344-351. DOI= http://dx.doi.org/10.1109/ICVGIP.2008.76

3. *"Unusual Activity Analysis using Video Epitomes and pLSA"*, Ayesha Choudhary, Manish Pal, Subhashis Banerjee and Santanu Chaudhury. In Proceedings of the 2008 Sixth indian Conference on Computer Vision, Graphics & Image Processing (December 16 - 19, 2008). ICVGIP. IEEE Computer Society, Washington, DC, 390-397.
DOI= http://dx.doi.org/10.1109/ICVGIP.2008.89

4. *"Video Mining for Event Discovery"*, Ayesha Choudhary, Santanu Chaudhury and Subhashis Banerjee. In Proceedings of the National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, Ahemdabad, India, January 2008.

5. *"Unusual Activity Analysis in Video Sequences"*, Ayesha Choudhary, Santanu Chaudhury and Subhashis Banerjee. In Proceedings of the 11th international Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (Toronto, Ontario, Canada, May 14 - 16, 2007). A. An, J. Stefanowski, S. Ramanna, C. J. Butz, W. Pedrycz, and G. Wang, Eds. Lecture Notes In Artificial Intelligence, vol. 4482. Springer-Verlag, Berlin, Heidelberg, 443-450. DOI= http://dx.doi.org/10.1007/978-3-540-72530-5_53

ACADEMIC
EXPERIENCE

3 Teaching Assistant
Department of Computer Science and Engineering, IITD

(a) Digital Image Processing (CSL783), July 2009 - December 2009, Prof. Prem Kalra

(b) Artificial Intelligence (CSL671), Jan 2009 - May 2009, Prof. K. K. Biswas

(c) Digital Image Processing (CSL783), July 2008 - December 2008, Prof. Prem Kalra

(d) Computer Graphics(CS474/CS781), Jan. 2008 - May 2008, Dr. Subodh Kumar.

(e) Digital Image Processing (CSL783), July 2007 - Dec 2007, Prof. K. K. Biswas.

(f) Introduction to Computer Science(CSL201), Jan. 2007 - May 2007, Dr. Amit Kumar.

(g) Digital Image Processing (CS783), July 2006 - Dec. 2006, Prof. Prem Kalra.

(h) Computer Graphics(CS474/CS781), Jan. 2006 - May 2006, Prof. Prem Kalra.

(i) Numerical and Scientific Computing (CSL361), July 2005 - Dec. 2005, Prof. Subhashis Banerjee.

(j) Introduction to Computer Science(CSL101), May 2005 - July 2005, Dr. N. Gupta.

(k) Introduction to Computer Science(CSL101), Jan. 2005 - May 2005, Prof. B.N Jain.

(l) Introduction to Computer Science(CSL101), July 2004 - Dec. 2004, Prof. Subhashis Banerjee.

(m) Numerical and Scientific Computing(CSL361), Jan 2004 - May 2004, Dr. D. Bharadwaj.

(n) Supercomputing for Engineering Applications, July 2003 - Dec. 2003, Dr. D. Bharadwaj.

Department of Mathematics, IITD

(a) Algebraic Geometry, July 2001 - Dec 2001, Prof. J. B. Srivastava.

(b) C++, July 2000 - July 2001, Dr. Raj Ahuja.

PROFESSIONAL
EXPERIENCE

1. **Project Scientist**
   - April 2009 - till date
     Project Title: "Visual Enhancement, Manipulation and Re-targeting of Videos"
     P.I: Prof. Subhashis Banerjee
     Funding Agency: Naval Research Board, India
     Role: Researcher

- October 2008 - March 2009
  Project Title: "TCS Media Lab at IITD (Video Surveillance)"
  P.I: Prof. Subhashis Banerjee
  Funding Agency: TCS Research, India
  Role: Researcher

2. **Associate Technology** (February 2002 - August 2002)

   - Employer: Sapient Corporation (India) Pvt. Ltd.
   - Role: Software Engineer: Designer, Developer, Tester and Bug-fixer.

COMPUTER SC. COURSES	Algorithm Analysis and Design, Operating Systems, Data Structures, File Systems, Database Management Systems, Computer Vision, Computer Graphics, Computer Networks, Computer System Software, Computer Architecture, Advanced Computer Graphics, Digital Image Processing, Pattern Recognition, Theory of Computation, Machine Learning and Artificial Intelligence.
MATHEMATICS COURSES	Real Analysis, Complex Analysis, Linear Algebra, Topology, Functional Analysis, Group Theory, Ring Theory, Projective Geometry, Algebraic Geometry, Differential Equations, Partial Differential Equations, Discrete Mathematics, Numerical Optimization, Operations Research, Fuzzy logic and its Applications, Probability and Statistical Inference, Numerical Methods for Scientific Computing.
ACCOMPLISHMENTS	Selected for the JENESYS 2008 program to represent IIT, Delhi in Japan. **First** rank in **B.A. (Honors) Mathematics**, 1998. **Second** rank in **M. Sc. Mathematics** (2000) and in **M.Tech. Computer Applications** (2002). **Qualified CSIR-UGC JRF-NET** examination held in Dec 1999. Received **CSIR-UGC Junior Research Fellowship** in M.Tech (C.A) July 2000-Dec 2001. **Qualified GATE 2000** in Mathematics with an All India Rank of 152. Received **Certificates of Excellence** in Undergraduate Mathematics Olympiad held in Delhi in 1997 and 1998.
EXTRACURRICULAR ACTIVITIES	Visited Japan for 15 days as part of the Indian contingent under **JENESYS 2008**. Done proficiency level course in **Spanish (86%)** from July to December 2005. Done proficiency level courses in **Japanese (A+)** and **French (A)** from July to December, 2001. Attended Workshop in Mathematics held at Department of Mathematics, IIT Delhi, in October 1996 and 1997. Green-1 belt in Tae Kwon Do.
SKILLS	Languages: English, Hindi and beginner level French, Spanish and Japanese. Programming Languages: C, C++, C#, JAVA, FORTRAN77 and PL/SQL. Other Technologies: OpenCV, Matlab, Gnuplot, HTML, ASP, ASP.NET, LaTeXand MS-Office. Operating Systems: Unix, Linux and Windows.