

DARRYL D'SOUZA

Cyber Security Laboratory
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OBJECTIVE

Seeking a research position to contribute towards innovating and developing new ideas and technologies in image CAPTCHAs, behavioral biometrics, bot detection, face classification, pattern recognition and computer vision. Willing to relocate, work as a key player and assume leadership in creative and challenging environments

SUMMARY

- Hands-on experience in software development and programming
- Knowledge of image CAPTCHAs, behavioral biometrics (mouse dynamics), machine learning, pattern recognition and computer vision
- Ability to work well both independently and in a team as a leader or a member
- Goal oriented, hardworking individual with good communication skills, complemented by a good background in engineering

PROFESSIONAL EXPERIENCE

- **Cybersecurity Lab** **August 2009 – July 2014 (Expected)**
Department of Computer Engineering and Computer Science, University of Louisville, KY
Ph.D. Candidate
 - Detected avatar (artificial) faces for avatar recognition using Intel's OpenCV and Microsoft C#
 - Recognized avatar faces using Daubechies Wavelets and Support Vector Machines (Team work)
 - Built an image CAPTCHA prototype with human and avatar faces to tell humans from bots using C# and Microsoft SQL Server
 - Scripted an automated process of collecting avatar faces from the web using Sikuli (Team work)
 - Applied Local Directional Pattern (LDP) towards classifying human (natural) and avatar (artificial) faces
- **Instructor** **May 2012 – April 2014**
 - CECS 121 (Program Design in C): Taught C Programming to non-major students in various disciplines
- **Web Developer** **August 2007 – December 2008**
Department of Computer Engineering and Computer Science, University of Louisville, KY
 - Maintained and updated the web pages for the CECS Department
 - Migrated the existing web pages to adapt to the Content Management System PLONE
- **XML Integrator** **February 2007 – May 2007**
Zeus Learning
 - Developed E-learning Microsoft Office software for Pearson Education
 - Coded chapters of the software using XML and tested them

EDUCATION

- **Doctorate (Ph.D.) in Computer Science and Engineering** **August 2009 – July 2014 (Expected)**
Cybersecurity Lab, J.B. Speed School of Engineering, University of Louisville, KY
Relevant Coursework: Biometrics, Computer Vision, Digital Image Processing, Artificial Intelligence, Web mining, Combinatorial Optimization, Simulations
Research areas: Building image CAPTCHAs, human-artificial face classification, behavioral biometrics (mouse dynamics)
Cumulative GPA: 3.66
- **Master of Science (M.S.) in Computer Science** **August 2007 – May 2009**
J.B. Speed School of Engineering, University of Louisville, KY
Relevant Coursework: Data Mining, Computer Algorithms, Fundamental of Computer Networks, Introduction to Bioinformatics, Computational Cognitive Science, Databases, Cryptology and Computer Graphics
Cumulative GPA: 3.83

- **Bachelor of Engineering (B.Eng.) in Computer Engineering**
University of Mumbai, India

June 2002 - June 2006

Ranked in the top 10 students in a class of 65

ACADEMIC PROJECTS

- **Ph.D. (Doctoral)**
 - Building a face recognition system using MATLAB
 - Image segmentation to identify and color regions in an image using MATLAB
 - Performance comparison of Bubble Sort (on GPU) and Quick Sort (on CPU) using CUDA
- **Master of Science (M.S.)**
 - 3D Airplane game using Microsoft XNA Game Studio 3.0
- **Bachelors**
 - Xpressmail using PHP and MySQL
 - Online E-greetings & Gift Store using HTML and Oracle

HONORS

- First place in Computer and Information Sciences at the 2013 Graduate Research Competition Awards, *Kentucky Academy of Science Annual Meet 2013*, Morehead State University, Morehead, KY
- Second place in Research Poster competition at the *Graduate Research Symposium*, University of Louisville, Louisville, KY, 2013
- First place in Computer and Information Sciences at the 2010 Graduate Research Competition Awards, *Kentucky Academy of Science Annual Meet 2010*, Western Kentucky University, Bowling Green, KY
- CECS Master of Science Award for attaining the highest cumulative scholastic standing in the Master of Science program at the JB Speed School of Engineering, University of Louisville, Louisville, KY, 2009

PRESENTATIONS & TALKS

- "Image CAPTCHA with an educational purpose" to help kids identify images of animals, birds, reptiles and insects, *Louisville Mini Maker Faire*, Louisville, KY, September 28, 2013
- "Avatar CAPTCHA-Telling Computers and Humans Apart via Face Classification", *Graduate Research Symposium*, University of Louisville, Louisville, KY, March 21, 2013
- "Avatar CAPTCHA-Telling Computers and Humans Apart via Face Classification", *International Conference on Electro/Information Technology*, Indianapolis, IN, May 8, 2012
- "Baseline Avatar Face Detection using an Extended Set of Haar-like Features", *The 23rd Midwest Artificial Intelligence and Cognitive Science Conference*, University of Cincinnati, Cincinnati, OH, April 21, 2012
- "Artificial Human Face Recognition via Daubechies Wavelet Transform and SVM", *CGAMES 2011 Conference*, Galt House, Louisville, KY, July 30, 2011

PUBLICATIONS

- "Avatar CAPTCHA-Telling Computers and Humans Apart via Face Classification", *International Conference on Electro/Information Technology*, Indianapolis, IN, May 6-8, 2012
- "Baseline Avatar Face Detection using an Extended Set of Haar-like Features", *The 23rd Midwest Artificial Intelligence and Cognitive Science Conference*, University of Cincinnati, OH, April 21-22, 2012
- "Automated Collection of High Quality 3D Avatar Images", *The 23rd Midwest Artificial Intelligence and Cognitive Science Conference*, University of Cincinnati, OH, April 21-22, 2012
- "Avatar Face Recognition using Wavelet Transform and Hierarchical Multi-scale LBP", *The 10th International Conference on Machine Learning and Applications*, Honolulu, HI, Dec 18-21, 2011
- "Artificial Human Face Recognition via Daubechies Wavelet Transform and SVM", *CGAMES 2011 Conference*, Galt House, Louisville, KY, July 27-30, 2011

EXTRA-CURRICULAR ACTIVITIES

- Information Technology Coordinator (2010-2011): American International Relations Club (AIRC), University of Louisville, Louisville, KY
- Organizing Committee Officer (2010-2011) for "International Banquet", an annual cultural event organized at the University of Louisville and attended by more than 500 people every year
- Graduate Student Ambassador (2011-2012), School of Interdisciplinary and Graduate Studies, University of Louisville, Louisville, KY
- Member of the University of Louisville Racquetball club

REFERENCES

Available upon request