

ANURAG SARKAR

CONTACT INFORMATION

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EDUCATION

Northeastern University

September 2016 - Present

- Ph.D. (*in progress*), Computer Science
- Current GPA: 3.67/4
- Relevant Coursework: Foundations of AI, Game AI, Advanced Algorithms

St. Xavier's College (Autonomous), Kolkata (under University of Calcutta)

August 2014 - May 2016

- M.Sc., Computer Science
- GPA: 9.11/10

NSHM College of Management and Technology (under West Bengal University of Technology)

August 2011 - June 2014

- Bachelor in Computer Applications (BCA)
- GPA: 9.06/10

RESEARCH EXPERIENCE

Northeastern University

September 2016 - Present

Graduate Research Assistant, Playable Innovative Technologies (PLAIT) Lab

- Adviser: Seth Cooper
- Research Interests: Procedural Content Generation, Game AI, Human Computation Games
- Current Focus: Procedural level generation, application of PCG within HCGs, player engagement, skill/ratings/difficulty prediction

PUBLICATIONS

(*To Appear*) **A. Sarkar**, S. Cooper, "Level Difficulty and Player Skill Prediction in Human Computation Games", *Proceedings of AIIDE 2017*, October 2017.

M. Williams, **A. Sarkar**, S. Cooper, "Predicting Human Computation Game Scores with Player Rating Systems", *Proceedings of ICEC 2017, Tsukuba, Japan*, September 2017.

A. Sarkar, M. Williams, S. Deterding, S. Cooper, "Engagement Effects of Player Rating System-Based Matchmaking for Level Ordering in Human Computation Games", *Proceedings of FDG'17, Cape Cod, Massachusetts, USA*, August 2017. (**Honorable Mention**)

A. Sarkar, D. Datta, "A Frequency Based Approach to Multi-Class Text Classification", *International Journal of Information Technology and Computer Science*, Vol. 9, No. 5, May 2017.

A. Sarkar, S. Chatterjee, W. Das, D. Datta, "Text Classification using Support Vector Machine", *International Journal of Engineering Science Invention*, Vol. 4, No. 11, November 2015.

A. Acharya, D. Sinha, **A. Sarkar**, D. Seth, K. Basu, "A Mixed Approach to Smart

Group Formation in Collaborative Learning”, *Smart Computing Review*, Vol. 5, No. 5, October 2015.

A. Sarkar, D. Seth, K. Basu, A. Acharya, “A New Approach to Collaborative Group Formation”, *International Journal of Computer Applications*, Vol. 128, No. 3, October 2015.

A. Ghosh, **A. Sarkar**, A.S. Ashour, D. Balas-Timar, N. Dey, V. E. Balas, “Grid Color Moment Features in Glaucoma Classification”, *International Journal of Advanced Computer Science and Applications (SAI)*, Vol. 6, No. 9, September 2015.

PROJECTS

Procedural Level Generation for an Educational Puzzle Game (February - April 2017)

Designed a grammar-based PCG system that procedurally generated solvable levels for the educational puzzle game *May’s Journey*.

Comparing Q-Learning and SARSA Agents in Static and Dynamic Goal Oriented Environments (December 2016)

Compared the performance of two reinforcement learning algorithms, Q-Learning & SARSA, in implementing an AI agent for the classic 2D game *Snake*.

Use of Materialized Views in Incremental Data Mining and Content Based Image Retrieval (July 2015 - May 2016)

Developed two research tools for transaction processing and image classification, both using materialized views and an incremental mining approach.

ClassManager (February 2014 - May 2014)

Developed an online portal for creating and managing classes and adding teachers, courses and students to the classes. Additionally, augmented *TestManager* to manage student attendance and grades and ported it to the Android platform.

TestManager (November 2013 - December 2013)

Developed an online test portal using PHP and MySQL that allowed teachers to create MCQ tests and students to take them.

Retro Games (2011 - 2012)

Developed an application that allowed users to play simple versions of the classic games *Breakout*, *Pong*, *Snake* and *Tetris*.

HONORS AND AWARDS

Best Paper Honorable Mention (August 2017)

Awarded by the Foundations of Digital Games (FDG) conference

Graduate Fellowship (September 2016)

Awarded by Northeastern University

Father Jacques de Bonhome S.J. Memorial Gold Medal (January 2017)

Awarded by St. Xavier’s College, Kolkata

M.Sc Computer Science Class of 2016 Valedictorian (out of 60 students)

All-State Rank 7th in JECA 2014 (August 2014)

Joint Entrance Examination for Computer Applications conducted by WBJEEB

NSHM Medal of Merit (June 2014)

Awarded by NSHM College of Management and Technology
BCA Class of 2014 Valedictorian (out of 44 students)

SKILLS

Programming Experience

Python, Java, C#, C++, ActionScript, MATLAB, JavaScript

Languages

English (native/bilingual proficiency)
Bengali (native/bilingual proficiency)
Hindi (full professional proficiency)
Urdu (professional working proficiency)
French (elementary proficiency)

**WORK
EXPERIENCE**

Northeastern University

Graduate Research Assistant

September 2016 - Present

DirectData Inc.

Data Entry Operator

July 2011 - August 2016

Cubesquare Informatics

Content Writer

January 2011 - February 2012