

# ANURAG SARKAR

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## 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

**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*