## Abhishek Sharma

### Personal Data

DATE OF BIRTH: 22 July 1997

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### RESEARCH PAPER

Aug 2017 Second Author Irish Machine Vision and

**Image Processing** 

# Automatic Tracking System for Event Detection and Classification in Tennis

The paper manages to merge computer vision concepts with domain knowledge in tennis. It has three modules:

· Defining a computable grammar for a tennis match.

- Using computer vision to extract features from the video, and map them to attributes of the grammar previously defined.
- Feeding the above obtained data to a machine learning model, for classification purposes.

### **WORK EXPERIENCE**

May-July 2018 | Software development intern at Amazon India

Worked with Identity Services Team helping with design and implementation of a generic

cache library that would be used by various teams throughout Amazon.

March-April 2018 | Teaching Assistant for Formal Methods

Worked as teaching assistant for UG course Formal Methods that involves introduction

to Automata theory.

Aug-Nov 2016 | Software Developer at Authbase.net

Cyber Security Startup | Involved installation and management of

Involved installation and management of various tools, needed for website scanning purposes along. Also had to automate several tools by linking their results, for least

manual intervention during scanning.

### **EDUCATION**

MAY 2012 Higher Education - St. Ann's Convent School, Lucknow

**ICSE** Board

MAY 2014 Senior Education - Lucknow Public School, Lucknow

**CBSE** Board

JULY 2019 (Expected) Undergraduate, B. Tech. in Computer Science

International Institute of Information Technology, Hyderabad

### COMPUTER SKILLS

Basic Knowledge: JAVA, OPENGL

Intermediate Knowledge: C, C++, mysql, LINUX

### Courses

DATA STRUCTURES AND ALGORITHMS

COMPUTER SYSTEM ORGANISATION

ARTIFICIAL INTELLIGENCE

DATA WAREHOUSING AND DATA MINING COMPILERS\*

**OPERATING SYSTEMS SOFTWARE DESIGN** COMPUTER GRAPHICS COMPUTER NETWORKS DATABASE SYSTEMS

STATISTICAL METHODS IN AI

PRINCIPLES OF PROGRAMMING LANGUAGES\*

### **PROJECTS**

#### **Chord Protocol** NOVEMBER 2018

Distributed Systems

Implemented chord distributed hash table protocol used for fast lookup of nodes associated with information.

#### OCTOBER 2017 Adversarial Association Rule Mining\*

DATA MINING

We try to simulate how opponents in business market can exploit association rule mining to their benefit by introducing false trends to direct the market in their favour.

#### Two Phase Merge Sort Algorithm SEPTEMBER 2017

Database Systems

Written in C++, the code enables user to sort very large multi-column csv file(over 1 GB). Consisting of two phases, it sorts the file into chunks based on available memory and then merges them into one file which contains all sorted entries.

#### AUGUST 2017 Mini SQL Engine

**Database Systems** 

A mini SQL Engine with Parser, both written in Python, that can parse and operate simple sql queries like SELECT, FROM, WHERE with support for aggregate functions like sum, avg along with join statements.

#### APRIL 2017 **Distance Vector Routing Protocol**

Computer Networks

The project involved simulation of a computer network which supports distance vector routing using UDP sockets, done in Python. The routing algorithm computes the routing table using Bellman Ford Algorithm, to carry out real time updates to the table based on network changes.

#### MARCH 2017 **File Sharing Protocol**

Computer Networks

A file system protocol that auto syncs two directories on same or different computers, looking out for any changes in files. It supports file transfer over TCP or UDP protocols along with checksum to verify the contents of the file transferred.

### JANUARY 2017

### Ultimate 4by4 Tic Tac Toe Bot

Artificial Intelligence

A bot that plays ultimate tic tac toe, made using minimax search and alpha beta pruning. Heuristic was developed that analysis board position by measuring and allocating dynamic weights to each cell on the board according to game situation.

#### OCTOBER 2016 Mini Shell

**Operating Systems** 

A mini shell written in C that supports basic terminal commands like ls, echo, cd through fork and exec. Also supports background processes and signal handling.

### ACHIEVEMENTS

- Mentor for First year students, batch 2017.
- Dean's Merit List, Monsoon 2015.