Curriculum Vitae – Kalyan Roy

Personal Information

Kalyan Roy
South Katia, Satkhira Sadar, Satkhira-9400
Bangladesh

Date of Birth : 26^{th} *December*, 1995

+8801749888998
kalyan.roy@northsouth.edu
kalyanroy.sat007@gmail.com

https://kalyanroy1995.github.io/
Google Scholar Profile
https://github.com/kalyanroy1995
https://icpc.baylor.edu/ICPCID/UR7RDBP1AOEO

Education

BS in *Computer Science and Engineering* at **North South University**, Dhaka, Bangladesh
August, 2014 - December, 2019

Work Experiences

Teaching Assistant (TA) at **North South University**, Dhaka, Bangladesh
Courses Assisted : CSE373 : Design and Analysis of Algorithms
CSE225 : Data Structures and Algorithm
January, 2019 - September, 2019

Research Assistant (RA) at **North South University**, Dhaka, Bangladesh
November, 2018 - Present

Supervised by
Dr. Ahsanur Rahman
Assistant Professor & Undergraduate Co-ordinator(CSE)
Department of Electrical and Computer Engineering
North South University
http://ece.northsouth.edu/people/dr-ahsanur-rahman

Skills

Operating Systems : Linux, Windows
Programming Languages : C, C++, Python, R, Java, Bash
Version Control : GIT
Database Tools : MySQL
Open Source Tools : Vim, Tmux, Valgrind, GNU profiler (gprof), GNU parallel
Office Software : LaTeX, Microsoft Office
Languages : Bengali, English, Hindi, Japanese

Research Interests

My research interest includes - ***Algorithms, Graph Theory and Data mining***

Publications

Journals

- **A Step towards Information Extraction : Named Entity Recognition in Bangla using Deep Learning**
  Redwanul Karim, M.A. Muhaiminul Islam, Sazid Rahman, Saif Ahmed Chowdhury, Kalyan Roy, Adnan Al Neon, Md. Sajid Hasan, Adnan Firoze, Rashedur M. Rahman
  Publisher : IOS Press
  DOI : 10.3233/JIFS-179349
  Date of Publication : 23 December 2019

Conference Papers

- **Crime Prediction Using Multiple-ANFIS Architecture and Spatiotemporal Data**
  Mashnoon Islam, Redwanul Karim, Kalyan Roy, Sadat Hossain, Saif Mahmood, Rashedur M. Rahman
  Publisher : IEEE Intelligent Systems IS'18
  DOI : 10.1109/IS.2018.8710564
  Date of Publication : 09 May 2019

Projects

- **Bangla Automatic License Plate Recognition (ALPR) System**
  Description : *In this project, we built a system that recognizes multiple vehicles license plates at a time. It works perfectly even if the taken videos of license plates are skewed, faded and blurry and taken at night or in dark light.*
  Technology : *Python, PyTorch, OpenCV*
  January, 2019 - September, 2019

- **A Unified Platform for Face Recognition - Deep Learning and Conventional Approach**
  Description : *In this project we built a unified platform for face recognition, in which several state-of-the-art deep learning and conventional models were integrated. The whole project was written in Python. Using this platform we can compare the performance of different face recognition models.*
  Technology : *Python, TensorFlow, OpenCV*
  January, 2018 - April, 2018

Current Ongoing Researches

- **A Fast Algorithm to Enumerate Maximal Quasi-cliques in a Graph (Weak Reject, ACM SIGKDD 2021)**
  Description : *In our research, we are trying to solve a graph related algorithm-based problem. We are working to find the largest quasi-cliques (dense sub-graph) in a graph where the sub-graphs have a minimum density cut-off value. Such that, density(G) $\geqslant \theta$, where G is a graph (If $G=(V,E)$ is a graph then V is a set of vertices and E is a set of edges) and θ is predetermined threshold value. For example, suppose we set the density cut-off value to 0.85, then the algorithm is to find the dense sub-graph which has at least 85% edges of a complete graph with same number of vertices. Furthermore, if a minimum number of vertex n is predetermined then the graph will start spanning from n and it will have a minimum size of n.*
  Technology : *C, C++, Python, Bash, NetworkX, Matplotlib, Seaborn*
  October, 2018 - Present

- **An Algorithm to Find Near Minimal Vertex-cover in a Graph**
  Description : *In our research, we are trying to solve a graph related algorithm-based problem. We are working to find the near minimal vertex cover in a graph in polynomial time as the optimistic solution of finding minimal vertex cover is an NP-complete problem.*
  Technology : *C, C++, Python, Bash, NetworkX*
  June, 2020 - Present

Awards and Participation

Participated in ICPC Dhaka Regional Site 2019
Participated in ICPC Dhaka Regional Site 2018
Participated in the Bangladesh Mathematical Olympiad National Site 2012