

Asoke Datta

☎ +1(209)777-9694 ✉ adatta2@ucmerced.edu • [linkedin.com/in/ad26](https://www.linkedin.com/in/ad26) • github.com/Asoke26

EDUCATION

University of California, Merced

Ph.D. Candidate, Computer Science GPA: 3.84/4.0 2018 - Ongoing
Leading University, Sylhet, Bangladesh

Bachelor of Science, Computer Science, and Engineering GPA: 3.37/4.0 2010 - 2013

RECENT COURSES

- Algorithm Design and Analysis • Advance Algorithms • Database System Implementation • Parallel Computing • Computer Vision
- Advanced Topic in Intelligent System • Big Data Science

TECHNICAL SKILLS

- CPP • Python • PostgreSQL • MonetDB • MapD • Oracle • DB2 • MySQL • Machine Learning • Tensorflow • CUDA
- OpenMP • MPI • gprof • PAPI • GDB • Valgrind

PROJECTS

Database Implementation Spring 2019

- **Objective:** Implement database main components including a) Catalog, b) Query Optimizer, c) Data Loader, and d) Execution Engine
- **Tools:** CPP, Lex, YACC; **Repo:** github.com/Asoke26/Database_Implementation
- **Result:** Full working database pipeline (syntax limited); input: query; Output: result

Cardinality Estimation Spring 2021

- **Objective:** Estimating Cardinality of a database query using sampling, histogram, sketches, and ML(CNN) model
- **Tools:** Python; **Repo:** github.com/Asoke26/Cardinality-Estimation
- **Result:** Programs estimated cardinality of a database query.

SOFC Approximation Fall 2019

- **Objective:** Approximate and optimize Solid Oxide Fuel Cell simulation using ML model and parallelize model training using GPU.
- **Tools:** Python, CPP, TensorFlow, OpenFuelCell, Cantera.; **Repo:** github.com/Asoke26/OpenFuelCell
- **Result:** Model accuracy 78 percent on synthetic data, runtime optimized by 98 percent

Autonomous Retail Spring 2020

- **Objective:** Tracking misplaced items in an autonomous Retail store which includes a) Event Detection b) Object Recognition
- **Tools:** Python, JavaScript, **ML Model:** PostNet, Hogg, **Method:** Image Subtraction; **Repo:** <https://tinyurl.com/y2mtrgd3>
- **Result:** Partial implementation; PoseNet accuracy 90 percent (20 cases); Image Classifier 70 percent accuracy (30 cases)

EXPERIENCE

University of California, Merced

Research Assistant Aug 2018 – Present

- Working on finding efficient techniques to optimize database queries.
- Developed models and scripts to generate synthetic workload and manipulate benchmark data based on experimental needs.
- Currently working on understanding the correlation between DB query execution and optimization.

University of California, Merced

Teaching Assistant (Database Systems) Aug 2018 - Present

- Conducted guest lectures and labs in a class of Max. 120 students.
- Supervise design and development of student class projects.
- Evaluate Student Performance and share feedback.

Accenture, Dhaka, Bangladesh

System Engineer Oct 2014 – Nov 2017

- Deploy and manage physical and virtual server environments.
- Develop methodologies for automation of manual operations.
- Problem troubleshooting, service delivery as per SLA, and documentation of major events.

PROFESSIONAL ACTIVITIES

- Sub-reviewer, Scientific and Statistical Database Management Conference [SSDBM 19,20]
- External-reviewer, IEEE International Conference on Big Data [BigData 2020]
- Sub-reviewer, ACM International Conference on Distributed and Event-based Systems [DEBS 2020]

Publications

- Yesdaulet Izenov, **Asoke Datta**, Jun Hyung Shin, Florin Rusu. COMPASS: Online Sketch-based Query Optimization for In-Memory Databases. Sigmod 2021, Link: dl.acm.org/doi/abs/10.1145/3448016.3452840
- Yesdaulet Izenov, **Asoke Datta**, Jun Hyung Shin, Florin Rusu. Online Sketch-based Query Optimization. Link: arxiv.org/abs/2102.02440
- Yesdaulet Izenov, **Asoke Datta**, Jun Hyung Shin, Florin Rusu. Simpli-Squared: A Very Simple Yet Unexpectedly Powerful Join Ordering Algorithm Without Cardinality Estimates. Link: arxiv.org/abs/2111.00163

Presentations

- Yesdaulet Izenov, **Asoke Datta**, Jun Hyung Shin, Florin Rusu. Sketch-based Join Order Selection for In-Memory Database Systems. Poster session presented at NorCal DB 2019. Northern California Database Meetup; 2019 May 1, San Francisco, California
- **Asoke Datta**, Yesdaulet Izenov, Brian Tsan, Florin Rusu. Join ordering- Without statistics. Venue: EECS seminar series Fall 21, UCMerced.