

# Yeasir Rayhan

PhD Researcher @Purdue University

## CONTACT INFORMATION

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Department of Computer Science  
Purdue University  
305 N. University Street  
West Lafayette, IN 47906  
Mail: [yrayhan@purdue.edu](mailto:yrayhan@purdue.edu)  
Website: <https://yeasirrayhanprince.github.io/>

## RESEARCH INTEREST

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Database Systems in Modern Hardware (SIMD Vectorization), Machine Learning for Database Systems, Spatio-Temporal Data Mining

## RESEARCH EXPERIENCE

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### Purdue University

*Graduate Research Assistant, Department of Computer Science*

**West Lafayette, IN**

*May, 2021 - Present*

- I am working in the context of the Intelligent Location+X server (ILX) project, where I am studying vectorization and NUMA-awareness techniques in support of location access methods and location-based query processing. My main focus is building an end-to-end index-based vectorized query execution engine while leveraging the SIMD capabilities of modern CPU architecture.

### Bangladesh University of Engineering and Technology

*Part-time Research Assistant, Dept. of CSE*

**Dhaka, Bangladesh**

*January, 2021 - August, 2021*

- I developed AIST, an Attention-based Interpretable Spatio Temporal Network for crime prediction, which can model the dynamic spatio-temporal correlations for a crime category based on past crime occurrences, external features (e.g., traffic flow and point of interest (POI) information) and recurring trends of crime. [[Demo](#)] [[Code](#)] [[Paper](#)]

## EDUCATION

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### Purdue University

Ph.D. in Computer Science

Field: Database Systems

Advisor: [Walid G. Aref](#)

**West Lafayette, IN**

*August 2021-Current*

### Bangladesh University of Engineering and Technology

B.Sc. in Computer Science & Engineering

Thesis: [Efficient Scheduling of Generalized Group Trips in Road Networks](#)

Advisor: [Tanzima Hashem](#)

**Dhaka, Bangladesh**

*July, 2014 - October, 2018*

## PRE-PRINTS

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- Walid G. Aref, Ahmed M. Aly, Anas Daghistani, **Yeasir Rayhan**, Jianguo Wang, Libin Zhou. [ILX: Intelligent "Location+X" Data Systems \(Vision Paper\)](#). In *Arxiv*, 2022.

## PUBLICATIONS

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- **Yasir Rayhan**, Tanzima Hashem, Muhammad Aamir Cheema, Hua Lu, Mohammed Eunus Ali. [An Efficient Approach for Indoor Facility Location Selection](#). In *EDBT*, 2023.
- **Yasir Rayhan**, Tanzima Hashem. [AIST: An Interpretable Attention-based Deep learning Model for Crime Prediction](#). In *ACM Transactions on Spatial Algorithms and Systems (TSAS)*, 2023.
- **Yasir Rayhan**, Tanzima Hashem, Roksana Jahan, Muhammad Aamir Cheema. [Efficient scheduling of generalized group trips in road networks](#). In *ACM Transactions on Spatial Algorithms and Systems (TSAS)*, 2019.

## POSTERS

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- **Yasir Rayhan**, Tanzima Hashem, Roksana Jahan, Muhammad Aamir Cheema. [Efficient scheduling of generalized group trips in road networks](#). In International Conference on Networking, Systems and Security (NSysS), 2019

## TEACHING EXPERIENCE

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<b>Purdue University, West Lafayette, IN</b> <i>Graduate Teaching Assistant, Department of Computer Science</i>	<i>August, 2021 - May, 2021</i>
<b>East West University, Dhaka, Bangladesh</b> <i>Lecturer, Department of Computer Science and Engineering</i>	<i>January, 2019 - July, 2021</i>
<b>Eastern University, Dhaka, Bangladesh</b> <i>Lecturer, Department of Computer Science and Engineering</i>	<i>October, 2018 - December, 2018</i>

## ACADEMIC SERVICE

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**Conference Reviewer:** NSysS (2020), APWEB-WAIM (2019, 2020), ICASERT (2019)  
**Organizing Committee Member:** ICASERT (2019)

## AWARDS & GRANTS

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- Co-author of the proposal “Interpretable Spatio-Temporal Deep Learning Models for Safe Cities” and was awarded 6000\$ grant by the ICT Division, Bangladesh, 2020
- Regional Winner (Asia) in Computer Science, [The Global Undergraduate Awards](#), 2019, for my undergraduate thesis. [[Entry](#)]