

SHASHWAT JAISWAL

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EDUCATION

University of Illinois Urbana-Champaign

Doctoral Student, Computer Science

Champaign, IL, USA

August 2023 - Present

Indian Institute of Technology (IIT) Bhilai

B.Tech. (Honors), Computer Science | GPA: 9.8 / 10.0 | Rank 1 out of 132

Raipur, India

July 2019 - May 2023

Thesis: A Lightweight Peer-to-Peer Spatio-temporal Edge Datastore for UAV Fleets

Awards: Institute's Gold Medal for Highest GPA amongst all Graduating Students

Senate's Award for Highest GPA amongst all Graduating Students in CS

Alumni Association's Young Researcher's Award

Baroda Achiever's Award for Academic Excellence

P K Jain Memorial Award/Gold Medal for Institutional and Societal Development

R P Singh Memorial Award for Leadership and Social Work

GeetAmal Ghosh-Roy Award for Academic Excellence

St. Francis' College

Senior Secondary, Science | Score: 96.75% | Rank 1 out of 164

Lucknow, India

May 2019

Award: Rev. Fr. Romano Scholarship for Academic Excellence

EXPERIENCE

The University of British Columbia

Visiting International Research Student

Vancouver, Canada

May 2023 - Present

- Worked on building a general purpose anomaly detection framework for edge systems like drones, smart farms etc.
- Adapted Language Models and implemented DSL to predict edge sensor data. Mentor: **Prof Karthik Pattabiraman**

EVM Management System 2.0

Principal Investigator

Raipur, India

April 2022 - March 2023

- Awarded a project for building EVM Management System for Election Commission of India worth INR 36 Million.
- Solution intended to be used in the 2024 National General Elections of India at a scale of upto 100,000 concurrent users.

The University of British Columbia

Visiting International Research Student

Vancouver, Canada

May 2022 - August 2022

- Worked on Characterizing Temperature Variability on Nvidia Jetson platforms with standard CNN benchmarks.
- Optimization of parameters to ensure QoS within the specified energy budget on drones. Mentor: **Prof Matei Ripeanu**

The Linux Foundation @ Open Mainframe Project

Software Developer Intern

Remote

June 2022 - August 2022

- Worked on the Anomaly Detection Engine under the Open Mainframe Project to detect anomalous behaviour via logs.
- Added support for parsing and analysing Nginx logs to detect possible anomalies and improved support for Spark.

Google

Cloud Engineer Intern

Bangalore, India

May 2022 - July 2022

- Data Engineer for data orchestration, pipeline and Looker dashboard setup for Telenor, a Google Cloud Customer.
- Snowflake and SQL Server to Big Query migration advisory for Adtalem, a Google Customer.

Google Summer of Code @ Checkstyle

Software Developer

Remote

May 2021 - August 2021

- Worked on adaptation of Behavior Driven Development Ideas for Testing of Source Code and Validation Algorithms.
- Migrated the project to Truth - Google's new assertion framework and incorporated new Pitest mutators.

PUBLICATIONS

- Xiaojuan Ma, Chirag Shetty, Shashwat Jaiswal and Indranil Gupta. 2024. Efficient Model Parallelism for ML. Under review at a conference.
- Shashwat Jaiswal, Suman Raj, Subhajit Sidhanta and Yogesh Simmhan. 2024. A Spatiotemporal Datastore for Drone Fleets. Under review at a conference.
- Amirhossein Ahmadi, Hazem Abdelhafez, Shashwat Jaiswal, Karthik Pattabiraman, and Matei Ripeanu. 2023. Hot Under the Hood: An Analysis of Ambient Temperature Impact on Heterogeneous Edge Platforms. In Proceedings of the 6th International Workshop on Edge Systems, Analytics and Networking (EdgeSys '23). **Best Paper Award**
- Sahiba Suryawanshi, Dhiman Saha, and Shashwat Jaiswal. 2023. TIDAL: Practical Collisions on State-Reduced Keccak Variants. In Applied Cryptography and Network Security: 21st International Conference, ACNS 2023, Kyoto, Japan, June 19–22, 2023, Proceedings, Part I.
- Shashwat Jaiswal and Subhajit Sidhanta, "Toward a smart multi-unmanned aerial vehicle system," in IEEE Potentials, vol. 41, no. 1, pp. 22-25, Jan.-Feb.

RELEVANT SKILLS

Languages:	Java C++ C Python Go Dart Javascript SQL HTML/CSS
Frameworks:	Django FastAPI Truth JUnit React Tensorflow PITest Flutter gRPC
Platforms:	Linux Web Windows Amazon Web Services Google Cloud Platform Nvidia Jetson
Tools:	Git MySQL ANTLR Flex Bison Firebase Docker CI/CD
Other Skills:	Content Writing Public Speaking Communication Team-Work Management

PROJECTS

- Distributed Indexing and Querying from Multi-UAV Systems** [Java, gRPC, Apache Thrift] *Oct 2021 - Present*
 - Implemented gRPC communication for data and metadata querying between Java applications on drones and fogs.
 - Other intricate mechanisms like caching, indexing, distributed querying and mobility support for drones.
- Round Reduced Collisions in SHA-3** [C, Cuda] *Sep 2021 - Feb 2022*
 - Implemented the Target (Internal) Difference Algorithm for finding hash collisions in round reduced (3, 6 round) SHA3.
 - This is the third in the world and the first open source version available of the algorithm. GPU Support is in progress.

COURSEWORK

Pursuing:	Data Systems + ML
Completed:	Artificial Intelligence, Information Retrieval, Computer System Design, Information Security, Natural Language Processing, Graph Theory, ML Applications for Wireless Communication, Machine Learning, Cryptography, Computer Networks, Principles of Programming Languages, Blockchain Technologies, Algorithms, Data Structures, Database Management Systems, Introduction to Language Processing (Compilers), Discrete Structures, Computer Organisation & Architecture, Theory of Computation, Operating System, Distributed Systems, Lightweight Cryptography

ACHIEVEMENTS

Present	Rated 5 Star on CodeChef and 1700+ (Expert) on Codeforces
Sep 2022	Honorable Mention at ACM ICPC Asia Regionals for three consecutive years 2020, 2021, 2022
Sep 2022	Dan Kohn Scholarship by The Linux Foundation
May 2022	Global Top 50 in the Solution Challenge 2022 by Google
Mar 2022	German Academic Exchange Service DAAD WISE Scholarship 2022
Dec 2021	Mitacs Globalink Research Internship Award
Mar 2021	Google Hash Code - National Rank 11 (Global Rank 143) by Google

LEADERSHIP AND VOLUNTEERING

2021-22	Google Developer Student Club Lead
2020-23	Microsoft Learn Student Ambassador
2020-23	Open Source Mentor at OpenLake, India (Open Source Society)
2020-23	Representative, Institute's Undergraduate Committee, IIT Bhilai (Nominated by Dean, Academics)
2020-21	Chairperson, Students' Senate at IIT Bhilai (Elected)
2020-21	President, Ingenuity (Coding Club), IIT Bhilai (Nominated)