

Shubham Kaushik

Software Engineer | Systems Researcher

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EDUCATION

Jan 2024 - Present	Doctor of Philosophy (Ph.D.) Brandeis University , MA, United States Major: Computer Science
Sep 2022 - Dec 2023	Masters of Science (M.S.) Boston University , MA, United States Major: Computer Science with specialization in “Data-Centric Computing” GPA: 3.88/4.0
Jul 2014 - Jun 2018	Bachelor of Technology (B.Tech.) Maharshi Dayanand University , Haryana, India Major: Computer Science & Engineering Thesis: “Fault Modelling of an Object-Oriented System using Colored Petri Nets”

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, SQL, Rust (*learning*)
- **Markup Languages:** HTML, CSS, JSON, YAML, \LaTeX , Markdown
- **Databases:** RocksDB, Postgres, MongoDB, Redis, SQLite, ORM
- **Tools & Systems:** Kafka, Hadoop, gRPC, Microservices, Asyncio, Git, ETL, Flink, AWS

PROFESSIONAL EXPERIENCE

Jan 2024 - Present	Ph.D. Researcher Brandeis University , MA, United States
Mar 2022 - Aug 2022	Software Engineer , <i>Server Programming Team</i> Kwalee , India
Jun 2021 - Mar 2022	Engineer - Information Security , <i>Cyber Fusion, Information Security</i> FIS Global , India
Jul 2018 - Jun 2021	Project Engineer , <i>Big Data, Cyber Defense</i> <i>Python Cloud Computing, Wipro Digital</i> Wipro Limited , India

PROJECTS

- **Range Query-Aware Log-Structured Merge (LSM) Trees** (*Ongoing*): Developing data reorganization strategies and layouts to optimize the performance of range queries in LSM-based storage systems. [[readme](#)]
- **Multi Layered Detection Model (MLED) for Error Detection** (*Ongoing*): Creating a flexible system to reduce undetected errors in petabyte-scale file transfers through layered error-checking methods. [[readme](#)]
- **Benchmarking LSM-Based Storage Engines:** Analyzed performance of LSM trees with different memory buffers across various types of workloads, offering guidelines for optimal buffer selection. [[publication](#)]
- **Heterogeneity-Aware Operator Placement for Streaming Systems:** Proposed a dynamic method to place data processing operators based on data selectivity, improving efficiency and reducing network traffic. [[readme](#)]
- **Finding Vulnerabilities in VS Code Extensions:** Created a simulation framework to automate the installation and execution of VS Code extensions, identifying security vulnerabilities by analyzing open ports. [[readme](#)]

CERTIFICATIONS

Jul 2023	“The Ultimate Hands-On Hadoop : Tame your Big Data !” - Udemy [link]
Jul 2023	“Beginning C++ programming from Beginner to Beyond” - Udemy [link]
Oct 2018	Statement of accomplishment for “ Python Track” - DataCamp [link]

CURRICULAR ACTIVITIES

Sep 2023	Judged and mentored at HackMIT 2023 , aiding teams with technical challenges.
Nov 2022	Mentored 4 teams, with an average of 20 participants at BostonHacks .
Jan 2017	Volunteered in the Program Event Management team at the <i>National Youth Festival</i> .