

# Joy GHOSH

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## WORK EXPERIENCE

- Graduate Research Assistant at **Dept. of Computer Science, Colorado State University** (Aug 2019 - Present)  
Area - **Software Engineering**. Working on automatically detecting Domain Data Constraints in Software Documentation files.
- Junior Software Engineer at KONA SOFTWARE LAB LTD., Dhaka (Feb 2018 - May 2019)
  - Decreased file read/write time in **USIM** card by **26%** after changing internal file system data structure to hash map based architecture. Used **Java** and followed **3GPP, ETSI** standards.
  - Decreased **4G authentication** time of **USIM** card by **31%** by skipping common calculations.
  - Developed features like undo/redo operations for GUI based USIM personalization tool using **Java Swing**.
  - Researched different **Delta encoding** algorithms for FOTA servers and tested their performance on **Wandboard Quad**. Worked with **C, u-boot**.
- Junior Programmer at CTRENDS SOFTWARE AND SERVICES LTD., Dhaka (Oct 2017 - Jan 2018)
  - Worked on automating business processes in **ERP** Software. Used **Spring MVC, Hibernate, HTML5, CSS3, Bootstrap, jQuery, PostgreSQL**.

## EDUCATION

AUG, 2021 (Expected)	M. S. in COMPUTER SCIENCE <b>Colorado State University</b> , Fort Collins, Colorado.
SEPT, 2017	B. Sc. in COMPUTER SCIENCE AND ENGINEERING, GPA: 3.39 / 4.00 <b>Bangladesh University of Engineering and Technology</b> , Dhaka, Bangladesh.

## SKILLS

Language	C / C++, Java, Python, PHP
Database	Oracle SQL, MySQL, PostgreSQL
Web Development	HTML5, CSS3, Bootstrap, JavaScript, jQuery
Framework	Laravel, Spring MVC

## NOTABLE PROJECTS

- TUTORIAL BUDDY** - Developed a tool that can identify when a certain topic was discussed in a lengthy YouTube video. Used **Python, Tesseract OCR, OpenCV, Wit.ai Speech Recognition API**.
- DISTRIBUTED AND FAULT TOLERANT FILE SYSTEM** - Developed a tool where people can upload & retrieve files to a **Distributed Network**. **Fault Tolerance** is achieved via **Replication** and **Erasur Coding**. Used **Java, TCP, Reed-Solomon API**.
- P2P NETWORK** - Developed a tool like **Pastry** from scratch to upload files to a **Distributed Network**. Used **Java, TCP**.
- USNEWS SCRAPPER** - Developed a tool to store University ranking data from **usnews.com** in excel file. Used **Python**.
  - Can be installed from **PyPi** by '**pip install usnews-scrapper**' command.
- MOVIES360** - Developed a movie website similar to **IMDB**. Used **Laravel, MySQL, HTML5, CSS3, PHP**.
- SPADE** - Developed a multiplayer card game to play via **LAN**. Used **Java, Java Swing, Socket Programming**.
- PERSONAL WEBSITE** - Developed a website hosted at **www.ijoyghosh.com**. Used **BootStrap, CSS3, jQuery**.
- TRAIN ALERT** - Developed an **Android** app that alerts user about nearby trains to stop accident. Used **Google Play services** location API, **REST API, MySQL, Raspberry Pi, GPS module**.
- 4-BIT PC** - Designed 4-bit PC with **MIPS** architecture and simple instructions as a hardware project.
- GRAPH PLOTTER** - Developed a tool that can plot 2D and 3D graphs from equations. Used **C, iGraphics**.
- PYCALENDAR** - Developed calendar tool. Used **Python**.

## ACADEMIC HONORS

- Technical Scholarship from Bangladesh University of Engineering and Technology (2013)
  - Awarded for good performance in B.Sc. admission test. Ranked **186th** out of nationwide 50,000 applicants.

## OTHER ACTIVITIES

- Tutored an Undergrad student on CS classes (Algorithms, Data Structure, Digital Logic Design, OOP, AI) for over 2 years.
- Created Bengali subtitle of movie 'Man of Steel' with a rating of 10/10 and over 3000 downloads.