

# Jai Agarwal

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## EDUCATION

- PES University** Bangalore, India  
*Bachelor of Technology - Computer Science and Engineering* *Aug 2016 - Jul 2020*  
**CGPA: 9.48/10; Graduated First Class with Distinction** [📄 Transcript](#)  
*Courses: Data Structures & Algorithms, Operating Systems, Big Data & Cloud Computing, Cloud Computing, Computer Networks & Security, Object Oriented Design, Web Technologies - I & II, Data Analytics, Machine Learning, Deep Learning.*
- CMR NPS (CBSE)** Bangalore, India  
*Secondary High School, Class-XII* *Jun 2014 - May 2016*  
**Score: 95.2%; secured A1 grade in all subjects**  
*Subjects: English, Mathematics, Physics, Chemistry, Computer Science*
- Presidency School Kasthurinagar (CBSE)** Bangalore, India  
*Secondary School, Class-X* *Jun 2013 - May 2014*  
**CGPA: 10/10; secured A1 grade in all subjects**  
*Subjects: English, Mathematics, Social Science, Hindi, Science*

## SKILLS SUMMARY







- Strengths:** Strong programming & debugging ability, Web Development, Application Security, Data analysis
- Languages:** C, C++, Java, Python, Golang, HTML, PHP, JavaScript, SQL, Bash, R
- Frameworks:** Spring Boot, NodeJS, ReactJS, Flask, LAMP, NLTK, SpaCy, TensorFlow, Keras
- Tools:** Kubernetes, Docker, Git, Wireshark, Vagrant, Jenkins, Anaconda, Jupyter notebook
- Platforms:** Linux, Web, MacOS, AWS, GCP, Azure
- Soft Skills:** Writing, Team work, Presentation, Time Management
- Sports & Hobbies:** Badminton, Table Tennis, Cricket, Yoga, Quizzing, Solving math puzzles

## EXPERIENCE

- Walmart Global Technology Services India Pvt. Ltd.** Onsite/Remote  
*Software Developer (Full-time)* *Jan 2020 - Present*
  - Started as a 6 month intern in Walmart InfoSec team, converted to a full time employee starting Aug 2020 in the InfoSec Development team
  - Worked on design and development of features for an internal **vault for secrets management**.
  - Contributed to development of features for internal **password sharing and credential management** tool.
  - Had the unique opportunity to work with proprietary software used in **Walmart payment gateways** for credit card and cvv detail encryption/decryption with format preserving encryption.
  - Involved in design and development of a service for **certificate lifecycle management**, which facilitates manual and auto renewal of certificates on Walmart loadbalancers.
- Walmart Global Technology Services India Pvt. Ltd.** Onsite  
*Summer Intern (Full-time)* *May 2019 - Jul 2019*
  - Cloudmarker:** Contributed to the Cloudmarker open source project, which is a framework used for cloud monitoring and auditing. Developed the plugin for auditing of GCP cloud environments.
  - Risk score:** Worked on integrating a ML model which used clustering techniques to categorize security misconfigurations and generate a risk score.
- GoIbibo - A go-MMT group company** Onsite  
*Software Development Intern (Full-time)* *Jun 2018 - Aug 2018*
  - Identification of fraudulent flight bookings:** Developed a Chrome extension using javascript to monitor and track down agents doing online booking frauds in call centers.
  - GIA chat bot:** Built an automated chat conversation for availing a cab voucher and booking a heli taxi to the airport. GIA is a Goibibo built Intelligent chat system.




## PROJECTS

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- **Explore using of ML models for replacing Database Indexes**  Research Project  
Aug 2019 - Dec 2019  
*Database, Hierarchical models, Neural networks, B+ Trees, Indexes*
  - Explored using machine learning models to replace database index structures, which exist in the form of B+Trees.
  - Worked with Cassandra DB, experimented with various learned models to learn the data storage patterns and make prediction on the location of a given record
  - The learned models reduced the additional storage required for indexes and also reduced the time required to make database queries.
- **Recommendation system for agriculture**   Code  Video Personal Project  
Oct 2018 - Dec 2018  
*Precision agriculture, Neural networks, Time series analysis, Supervised learning*
  - Developed a recommendation engine to suggest farmers with the correct crops they should plant looking at various factors like land area, weather patterns and crop season.
  - Used neural networks to predict crop production and time series analysis for predicting weather patterns. Recommendation to plant a crop was given based on estimated production and predicted weather.
- **Indian Cricket league prediction model**  Code Personal Project  
Sep 2018 - Nov 2018  
*Tools used: Apache Spark MLlib, Scala, PySpark*
  - Developed a score-wicket prediction model using Apache Spark MLlib to simulate the outcomes of Indian Premier League cricket matches during 2018 season.
  - Ball-by-ball data from previous matches was used to develop two simulation models - Bayesian probability-based and Decision tree-based.
- **Container Orchestration**  Code Personal Project  
Jan 2019 - Mar 2019  
*Tools used: Docker, Amazon Web Services - EC2 and AWS Load balancer*
  - Developed a container orchestrator similar to Kubernetes, that can perform load balancing, fault tolerance, and auto-scaling.
  - The orchestrator engine ran successfully inside the AWS EC2 instance and load balanced all HTTP incoming requests equally to every AWS container

## PUBLICATIONS & CONFERENCES

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- **Research paper: Graph-Assisted Attention for Path Finding in Question Answering Task** :
  - Paper was published in **Emerging Technologies in Data Mining and Information Security** (a Springer publication) on pages 735-748 on 5th May 2021.
  - Used knowledge graphs to answer multi-hop type, path finding based questions from the babI dataset.
  - Tech: NLP, Neural networks, End to end memory networks, Dynamic memory networks, Knowledge graphs.
- **Conference: IEMIS-2020, a Springer AISC conference**  Certificate :
  - The **2nd International Conference on Emerging Technologies in Data Mining and Information Security** was held from 2nd - 4th July, 2020 in Kolkata, India. The theme was Data mining, Machine learning, IoT and Information Security
  - Presented this [research paper](#) during the conference.
- **Conference: IEEE CCEM 2020, Pre-Conference workshop:**
  - The **IEEE International Conference on Cloud Computing in Emerging Markets (CCEM) Pre-Conference Workshop** was held on 29th February 2020 in Bangalore, India.
  - Presented this [research article](#) during the conference and received valuable feedback from professionals and academics.

## HONORS & AWARDS

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- Awarded with the **CNR Rao Merit Scholarship for 7 semesters in PES University** for excellent performance in academics and being in top 20% of the Computer Science batch.
- Finished at the **third place in CTF competition** organised by ISFCR (Center for Information Security, Forensics and Cyber Resilience) PES University on 27th July 2019.
- Completed **Github Hacktober Fest 2019** successfully. Contributed to 4 open source projects.
- Qualified for Grand finale of **SynerGE presents HACK'E'LTH 2019** organised by GE from 19th-20th September 2019 at Bangalore, India. Finished amongst the top 10 teams all over India.
- Successfully completed the **Crio Launch 2021 Student Developer program** from 31st Jan 2020 - 10th Apr 2020. Link to my project profile is [here](#) and the certificate is [here](#).
- Won **first place in In-QUIZ-itives 2021**, a tech quiz organised by Walmart in June 2021.
- Finished at the **first place in Core NetWars CTF tournament** organised by SANS & Walmart in October 2021.