

Jai Agarwal

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EDUCATION

- **PES University** Bangalore, India
Bachelor of Technology - Computer Science and Engineering *August 2016 - July 2020*
GPA: 9.48/10; Graduated First Class with Distinction [🔗 Transcript](#)
Courses: Data Structures & Algorithms, Operating Systems, Big Data & Cloud Computing, Cloud Computing, Computer Networks & Security, Objected Oriented Design, Web Technologies - I & II, Data Analytics, Machine Learning, Deep Learning.

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

- **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.
- **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.
- **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.

PROJECTS

- **Explore using of ML models for replacing Database Indexes** [🔗](#) Research Project
Database, Hierarchical models, Neural networks, B+ Trees, Indexes *Aug 2019 - Dec 2019*
 - 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
Precision agriculture, Neural networks, Time series analysis, Supervised learning *Oct 2018 - Dec 2018*
 - 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

- 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 paper](#) during the conference and received valuable feedback from professionals and academics.

HONORS & AWARDS

- 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.