

Jees Augustine

. ALGORITHM . DATABASE . DATA SCIENCE . DEEP LEARNING . GRAPHS . MACHINE LEARNING .

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EDUCATION

Ph.D. Computer Science and Engineering

University of Texas at Arlington, USA

(CGPA: 4.0/4.0)

Arlington, Texas

Fall 2014 - Fall 2020(Exp)

Master in Engineering . Computer Science and Engineering

Birla Institute of Technology & Science, Pilani, India

(CGPA: 8.19/10.0)

Pilani, India

Fall 2011- Fall 2013

PROFESSIONAL EXPERIENCE

Cisco Systems - India

SOFTWARE ENGINEER II

- Implementation and refinement of features in **Multi-Protocol Label Switching (MPLS)** and **Fast Rerouting (FRR)** on mobile backhaul networks.

Bangalore, India

Aug-2013 – Aug-2014

EMC Corporation

PROJECT INTERN

- Design and development of an application, choreographing the Backup Server Install/Upgrades in **Python**.
- Devising a **pseudorandom number generator** for verifying the client-side deduplication.

Bangalore, India

Jan-2013 – Jun-2013

Indian Institute of Technology - Chennai

PROJECT INTERN

- **Online Minimum Makespan Scheduling** with improved Buffer Size.

Chennai, India

May-2012 – Jul-2012

Vikram Sarabhai Space Center (VSSC)

PROJECT INTERN

- **Design of information warehousing** system for launch vehicle simulations using **JSP** and **MySQL**.

Trivandrum, Kerala

Nov-2009 – Jan-2009

AWARDS AND RECOGNITION

- Invitation by the Research Highlights Board to the Communications of ACM as Research Highlights 2020 for the best research in 2019 for our work “Efficient Signal Reconstruction for a Broad Range of Applications” (Published at SIGMOD Records).
- Cyneta Networks Outstanding Teaching Assistant Award – Graduate (2019)
- Kelcy Warren Graduate Fellowship for Engineering (2019)
- pVLDB Best Reproducibility Research Award 2018 for “Leveraging Similarity Joins for Signal Reconstruction” (*work will be featured in VLDB 2019*). -Link-
- Invitation to Special Edition of VLDB Journal 2019 for best research in 2018 for “Efficient Signal Reconstruction for a Broad Range of Applications” [honor given to less than 1% of the accepted papers]. - Link to the work -, - Link to editor's report of our work - .
- VLDB - 2018 Travel Award
- Computer Science and Engineering STEM Doctoral Fellowship [Fall 2018 – Spring 2019]

PUBLICATIONS

- [Demo - Submitted] **Jees Augustine**, Suraj Shetiya, Abolfazl Asudeh, Saravanan Thirumuruganathan, Azade Nazi, Nan Zhang, Gautam Das, Divesh Srivastava. “**Orca-SR: A System for Traffic Engineering based on Scalable Signal Reconstruction**”, Submitted to SIGMOD 2020.
- [Conference - Revision] Shohedul Hasan, Saravanan Thirumuruganathan, **Jees Augustine**, Nick Koudas, Gautam Das. “**Deep Learning Models for Selectivity Estimation of Multi-Attribute Queries**”, Submitted to SIGMOD 2020.
- [Journal] Abolfazl Asudeh, **Jees Augustine**, Azade Nazi, Saravanan Thirumuruganathan, Nan Zhang, Gautam Das, Divesh Srivastava. “**Scalable Algorithms for Signal Reconstruction by Leveraging Similarity Join**”, Special Issue of VLDB Journal 2019 on the best from VLDB 2018.
- [Poster] Abolfazl Asudeh, **Jees Augustine**, Azade Nazi, Saravanan Thirumuruganathan, Sona Hasani, Nan Zhang, Gautam Das, Divesh Srivastava. “**Database Techniques for Network Traffic Analysis**”, In *iPerform 2018*.
- [Conference] Abolfazl Asudeh, Azade Nazi, **Jees Augustine**, Saravanan Thirumuruganathan, Nan Zhang, Gautam Das,

Divesh Srivastava. “**Leveraging Similarity Joins for Signal Reconstruction**”. *VLDB: Very Large Databases 2018*.

- [Poster] Abolfazl Asudeh, Azade Nazi, Saravanan Thirumuruganathan, **Jees Augustine**, Sona Hasani, Nan Zhang, Gautam Das, Divesh Srivastava. “**Finding the Closest Point to a Prior in Large-Scale Sparse Binary Under-Determined Systems**”, In *iPerform 2017*.
- [Poster] Azade Nazi, **Jees Augustine**, Saravanan Thirumuruganathan, Gautam Das, Divesh Srivastava, Nan Zhang. “**Finding Top-k Source-Destination Flows in a Network**”. In *iPerform 2016*.

RESEARCH GRANTS

- **AT&T Research Grant, DBXLab** University of Texas at Arlington Spring 2017
- **Qatar Research Foundation Grant, DBXLab** University of Texas at Arlington Spring 2018

TALKS

- **Database Techniques for Network Traffic Analysis**, *iPerform 2018, University of Texas at Dallas*.
- **Finding the Closest Point to a Prior in Large-Scale Sparse Binary Under-Determined Systems**, *iPerform 2017, University of Texas at Arlington*.

WORKING PROJECTS

- Experimental Analysis of a General Plug-in for Optimizing Distance Calls for Metric Space Proximity Problems (Planned to submit to VLDB 2021, on April 01, 2020)
- A holistic approach to Federated Learning (Plan to Submit to NeurIPS – previously NIPS - 2021)

SKILLS

Data Analysis	Pandas, NumPy, SciPy
Machine Learning	SciKit-Learn
Deep Learning	Keras, TensorFlow
Visualization	Matplotlib, Tableau(beginner)
Languages	Python, C, Java, HTML, JSP
Databases	MS Access, MS SQL Server, MySQL, Oracle
Web Technologies	HTML, XML, CSS, JavaScript
Query Languages	SQL, PLSQL

RELVANT COURSES

Advanced Computational Models and Algorithms . Special Topics in Advanced Information Security . **Machine Learning** . **Advanced Algorithms and Complexity** . Advanced Computer Networks . Advanced Operating Systems . **Algorithm Analysis and Design** . Security in Computing . **Data Analysis and Modeling** . **Reasoning with Uncertainty** .

CERTIFIED COURSES ONLINE - MOOC

- Coursera **Introduction to Data Science in Python** -Link-
- Coursera **Programming for Everybody, Getting Started with Python** -Link-
- Coursera **Python Data Structures** -Link-
- Coursera **Using Python to Access the Web Data** -Link-
- Coursera **Using Databases with Python** -Link-

ONGOING COURSES ONLINE - MOOC

- Coursera **Deeplearning.Ai**
- Coursera **Machine Learning**
- Coursera **Neural Networks for Machine Learning**
- Udacity **Deep Learning from Google**
- edx **Machine Learning for Data Science**

PROJECTS

1. **Face Recognition using Support Vector Machines (SVM)** UTA, Sep 2014 – Dec 2014
Technology Python2.7, NumPy, SciPy
Dataset AT&T Image Dataset (40 different individuals)
Methodology **Principal Component Analysis** for dimensionality reduction, **SVM** for classification
Accuracy 88% in Testing
2. **Image Recognition using Linear Discriminant Analysis (LDA)** UTA, Sep 2014 – Dec 2014
Technology Python2.7, NumPy, SciPy
Dataset AT&T Image Dataset (40 different individuals)
Methodology **Principal Component Analysis** for dimensionality reduction, **LDA** for classification

Accuracy 94% in Testing

3. **Choreography of Backup Server Install/Upgrade** EMC-Corporation, Bangalore: Jan 2013 – Jun 2013
Technology Python2.7, Linux, EMC Avamar, MySQL
Dataset Proprietary, EMC corporation
Methodology **Choreograph the Software Upgrade**, Generate **Pseudo Number** from Linux to test, Validation and Sanity Check
Deployment for Internal Use at EM Corporation
4. **Live Migration of Virtual Machine over a Network** BITS, Pilani, Aug 2012 – Dec 2012
Technology Java, Linux, MySQL, KVM
Dataset Synthetic Dataset Generated
Methodology Premature Negotiation, Push-Pull Negotiation with source and destination
Deployment Experiential
5. **Middleware framework on the cloud enabling Semantic Dynamic Composition** BITS, Pilani, Jan 2012 – Dec 2012
Technology Java, Linux, MySQL
Dataset Synthetic Dataset Generated
Methodology Sematic module identification with Natural Language, compose brand-new cloud services based on requirement
Deployment Experiential
6. **Distributed System Simulator** BITS, Pilani, Sep 2011 – Dec 2011
Technology Java, Linux
Dataset Synthetic Dataset Generated
Methodology **Deadlock Detection, Deadlock Prevention**, Process Synchronization, **IPC**
Deployment Experiential
7. **Design of Information Repository System for Launch Vehicle** VSSC, ISRO, India Dec 2010 - Jan 2011
Technology JSP, MySQL, Apache Server
Dataset Proprietary flight data ISRO
Methodology **Deadlock Detection, Deadlock Prevention**, Process Synchronization, **IPC**
Deployment for Internal Use at VSSC, ISRO

TEACHING and MENTORSHIP

- **STEM Scholarship** for Graduate Teaching Assistant at long semesters at UTA. Fall 2014 – Current
- Graduate Teaching Assistant, **Secure Programming**, UTA. Fall 2017
- Graduate Teaching Assistant, **Advanced Topics in Database Systems**, UTA. Summer 2016
- Graduate Teaching Assistant, **Computer Networks**, UTA. Fall 2016, Spring 2016
- Graduate Teaching Assistant, **Computer Networks I: Protocols and Architecture**, UTA. Fall 2014 – spring 2015
- Teaching Assistant, **Data Structure and Algorithms**, Birla Institute of Technology and Science, India. Fall 2012
- Teaching Assistant, **Computer Networks**, Birla Institute of Technology and Science, India. Fall 2011 – Spring 2012

ACADEMIC ACHIEVEMENTS

- **1 among the 18 qualified** for BITSAT- Higher Degree Program (Computer Science), an **All India entrance examination** for admission into Master Degree by Birla Institute of Technology and Science, Pilani (BITS-Pilani), India.
- Secured **98.88 Percentile** in Graduate Aptitude Test in Engineering (**GATE**) in 2011 (**Written by .13M Students**).
- Project Forum Member (Masters) Computer Science Association BITS – Pilani.
- Secured **1st position** for presenting the paper “Self-Defending Networks-A Smarter Way to Defend” at **XTRIUM 09 v.20**, Technical Festival by Association of Electronics and Communication Engineering, MACE, Kothamangalam.
- Secured **2nd position** for presenting the paper “Self-Defending Networks with Automatic Intrusion Detection” at **Qbit’09 v.20**, Technical Festival organized by Department of Computer Science and Engineering, MACE, Kothamangalam.