

Jees Augustine

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

7751 NW Eleanor Ave, Portland, Oregon, 97229

☎ (+1) 682-560-7416 | ✉ augustine.jees@gmail.com | <https://jeesaugustine.github.io/> | 🐙 @jeesaugustine | 🌐 in/jeesaugustine

EDUCATION

Ph.D. Computer Science and Engineering

University of Texas at Arlington, USA

(CGPA: 4.0/4.0)

Arlington, Texas

Fall 2014 - Fall 2020

Master's 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

Microsoft Corporation

Redmond, Washington

SOFTWARE ENGINEER II

May-2021 – Present

- Successfully onboarded 84 environments across the globe with Zerto Trust Network Access (ZTNA) as part of the infrastructure buildout.
- Spearheaded Kubernetes shard creation for ZTNA, **slashing costs by 50%**, saving more than a million in cost in production environments.
- Optimized Nginx production deployments with leaner Kubernetes (K8S) charts, **saving over 1000 hours** and enabling faster security fixes.
- Providing Zero Trust Network for incoming client connections for secure and safe access to Microsoft Datacenters.

Cisco Systems - India

Bangalore, India

SOFTWARE ENGINEER II

Aug-2013 – Aug-2014

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

EMC Corporation

Bangalore, India

PROJECT INTERN

Jan-2013 – Jun-2013

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

Indian Institute of Technology - Chennai

Chennai, India

PROJECT INTERN

May-2012 – Jul-2012

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

Vikram Sarabhai Space Center (VSSC)

Trivandrum, Kerala

PROJECT INTERN

Nov-2009 – Jan-2009

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

AWARDS AND RECOGNITION

- Our work “Scalable Signal Reconstruction for a Broad Range of Applications” was *invited* as a **Research Highlight** by *Communications of ACM (CACM)* in February 2021.
- **Cyneta Networks Outstanding Teaching Assistant Award – Graduate** (2019)
- **Kelcy Warren Graduate Fellowship for Engineering** (2019)
- Our work “Efficient signal reconstruction for a broad range of applications” is *invited* to be published at the **SIGMOD Records** [honor given to less than 1% of the accepted papers]. - Link to the work -, - Link to editor's report of our work - .
- Invitation to our work “Scalable algorithms for signal reconstruction by leveraging similarity joins”, to *Special Edition of VLDB Journal 2019* as a *Special Issue Paper* at Springer-Verlag GmbH Germany, part of Springer Nature 2019.
- **pVLDB Best Reproducibility Research Award 2018** for “Leveraging Similarity Joins for Signal Reconstruction” (*work will be featured in VLDB 2019*).
- Our work “Efficient Signal Reconstruction for a Broad Range of Applications” won the **SIGMOD Research Highlights Awards** in 2018.
- **VLDB - 2018 Travel Award**
- **Computer Science and Engineering STEM Doctoral Fellowship** [Fall 2014 – Fall 2020]

PUBLICATIONS

- [SIGMOD 2021 Research] **Jees Augustine**, Suraj Shetiya, Mohammadreza Esfandiari, Senjuti Basu Roy, Gautam Das. “*A Generalized Approach for Reducing Expensive Distance Calls for A Broad Class of Proximity Problems*”.
- [Invited Communications of the ACM Research Highlights, 2020] Abolfazl Asudeh, **Jees Augustine**, Saravanan Thirumuruganathan, Azade Nazi, Nan Zhang, Gautam Das, and Divesh Srivastava: “*Scalable Signal Reconstruction for a Broad Range of Applications*”.
- [VLDB 2020 Demo] **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*”.
- [SIGMOD 2020 Research] Shohedul Hasan, Saravanan Thirumuruganathan, **Jees Augustine**, Nick Koudas, Gautam Das. “*Deep Learning Models for Selectivity Estimation of Multi-Attribute Queries*”.
- [VLDB] 2019] 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.
- [iPeform 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*.
- [VLDB 2018 Research] 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*.
- [iPerform 2017 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*.
- [iPerform 2016 Poster] Azade Nazi, **Jees Augustine**, Saravanan Thirumuruganathan, Gautam Das, Divesh Srivastava, Nan Zhang. “*Finding Top-k Source-Destination Flows in a Network*”.

SERVICE

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| ▪ International Conference on Very Large Data Bases (VLDB) | Program Committee Co-Chair (PC-CoC) |
| ▪ Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD'25) | Program Committee Co-Chair (PC-CoC) |
| ▪ International Conference on Data Engineering 2022(ICDE '25) | Program Committee Co-Chair (PC-CoC) |
| ▪ Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD'24) | Program Committee Co-Chair (PC-CoC) |
| ▪ SIAM International Conference on Data Mining (SDM '24) | Program Committee Co-Chair (PC-CoC) |
| ▪ SIAM International Conference on Data Mining (SDM '23) | Program Committee Co-Chair (PC-CoC) |
| ▪ SIAM International Conference on Data Mining (SDM '22) | Program Committee Co-Chair (PC-CoC) |
| ▪ International Conference on Data Engineering 2022 (ICDE '22) | Research Program Committee(R-PC) |
| ▪ MLADS Fall 2021 | Moderator |
| ▪ MLADS Fall 2021 | Reviewer |
| ▪ International Conference on Data Engineering 2022(ICDE '21) | External Reviewer |

RESEARCH GRANTS

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| ▪ 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

- 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
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

- 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
- 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
- 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
- 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
- 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
- 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
- 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.