

Joel Tony

✉ joeltony72@gmail.com

☎ +91 81057 53322

in in/joel-tony

🌐 jay-tau

👉 www.jaytau.com

Education

Birla Institute of Technology and Science Pilani, K.K. Birla Goa
Campus, *B.E. Computer Science*

2021 – present | Goa, India

CGPA: 8.90/10

- Recipient of Institute Scholarship- 80% tuition fee waiver
- Member of college athletics team

Relevant coursework: Distributed Computing (graduate-level), Compiler Construction, Computer Networks, Data Storage Technologies & Networks, Operating Systems, Computer Architecture, Principles of Programming Languages, Microprocessors

Sri Chaitanya Techno School, CBSE: Class 12

2019 – 2021 | Bangalore, India

Recipient of merit-based tuition fee waiver

Inventure Academy, ICSE: Class 10

2009 – 2019 | Bangalore, India

97.6% (2nd highest in school)

Two-time recipient of the Inventure Academy **Carpe Diem Scholarship for Excellence**

Professional Experience

Coditation Systems, Summer Intern

May 2023 – Jul 2023 | Pune, India

- Developed a **GPU remote development suite** for graphics applications
- Configured and deployed **Bazel** to optimize build processes, resulting in a significant reduction in build times
- Utilized a **cloud-based remote cache** to eliminate redundant builds

Mu Sigma Inc., Data Science Intern

Jul 2018 – Aug 2018 | Bangalore, India

- Developed a **regression model** & made data-driven insights to provide solutions to the client

Research Experience

SCI Institute, University of Utah, Undergraduate Researcher

Jan 2024 – present | Utah, USA

- Working with Dr. Manish Parashar [🔗](#) on implementing a **POSIX-compliant API for DataSpaces** [🔗](#)

Data, Systems & High Performance Computing (DaSH) Lab,

Oct 2022 – present | Goa, India

Undergraduate Researcher

- Deployed a **40-node cluster** consisting of rack servers, desktop workstations, GPU nodes and edge devices
- Improved reliability and **secured remote access** for ~20 off-campus students, by deploying ZeroTier and Mosh
- Monitored system metrics across the cluster, using **Netdata, InfluxDB and Grafana**

Embedded Systems Lab, Undergraduate Researcher

Aug 2023 – Dec 2023 | Goa, India

- Worked under Dr K.R. Anupama [🔗](#) on **designing a network protocol stack** for a **distributed cloudlet cluster**
- Used **ns-2** to simulate various real-world scenarios and observe network performance

CSIR - Central Electronics Engineering Research Institute

Jul 2022 – Aug 2022 | Pilani, India

(CSIR-CEERI), Undergraduate Researcher

- Collaborated with Dr. Dhiraj Sangwan [🔗](#) on **pseudo-colouring of dual-energy X-ray baggage scans**
- Performed **image segmentation** and sharpening, and material detection using OpenCV
- Leveraged **parallel processing** to create colormaps and implemented **false-coloring** algorithms based on existing research

Publications

Does Varying BeeGFS Configuration Affect the I/O Performance of HPC Workloads?, IEEE CLUSTER, 2023 [🔗](#)

2023

Arnav Borkar[†], **Joel Tony**[†], Hari Vamsi K.N, Tushar Barman, Yash Bhisikar, Sreenath T.M, Arnab K. Paul

Proficiency

Languages

Python, C/C++, Rust, Bash, Haskell, LaTeX

Frameworks

PyTorch, pandas, JAX, OpenCV, FastAPI

Technologies

Linux, Kubernetes, Docker, Git, Kafka, Ansible

Skills

Deep Learning, DevOps, Google Cloud Platform

Projects

- Dynamic Striping Configuration for HPC Storage,** Oct 2022 – present
BeeGFS, IOR, Distributed File System
- Working on **optimal file-volume mapping** in BeeGFS, considering file access patterns and storage utilization
 - Compared **BeeGFS, GlusterFS** and **Lustre** on a cluster with 3 storage servers, 2 metadata servers and 4 clients
- Data Prefetching for Edge Deep Learning Workloads,** Aug 2023 – Dec 2023
Apache Kafka, PyTorch, Distributed Deep Learning
- Implementing a **prefetching** mechanism to **reduce I/O overhead** and reduce overall training time
 - Using **Apache Kafka** to stream data from a **distributed file system** to compute nodes
- TCP/IP Stack Using Rust & C, Computer Networks, Rust, C** [↗](#) Aug 2023 – Dec 2023
- Integrated **Rust with a C-based** TCP/IP stack to explore conditional memory safety guarantees and the performance
 - Leveraged **perf** and the **Valgrind** suite to compare the performance of the integrated Rust code and original code
- Distributed Hash Table, Kubernetes, Docker, Flask, Distributed Systems**
- Implemented a **distributed hash table** based on the Chord system [↗](#) (Stoica et al., 2003) and deployed on **Kubernetes**
- Autograder for Batch Evaluation of C Programs,** Dec 2022 – Jun 2023
Software Development, Python
- Developed software to **automate grading** for over **1000 students'** programming labs & assignments
 - Leveraged symmetric encryption to authenticate the origin of submissions, to enable **detection of unfair means**
- OpenCSRankings, Pandas, XML** [↗](#) Apr 2024 – present
- A metrics-based ranking of the top Computer Science institutes and faculty in India, based on publications
 - Built a **streaming XML parser** to identify and aggregate publication statistics of researchers from DBLP

Awards

- AWS AI/ML Scholarship, AWS, Intel Corporation & Udacity** [↗](#) Nov 2022
One of 1000 students selected internationally for the AWS AI/ML Scholarship in collaboration with Intel and Udacity.
- Nullcon Goa Winja CTF - Rank 18** Sep 2022
Secured international rank 18 as a member of team BITSkrieg
- Vidyarthi Vigyan Manthan, Vijnana Bharati, Vigyan Prasar, NCERT** [↗](#) 2020
- **VVM 2020** - Karnataka **state rank 2**
 - **VVM 2017** - **All India Rank 2**
- Best RYLAarian, Rotary International** 2019
Awarded best RYLAarian during Rotary Youth Leadership Awards (RYLA) hosted by Rotary International [↗](#)

Certificates

- Fundamentals of Deep Learning** [↗](#) **Machine Learning Specialisation** [↗](#)
Nvidia Coursera, DeepLearning.ai, Stanford University

Teaching Experience

BITS Pilani

- Teaching Assistant (Spring 2024)* Jan 2024 – May 2024 | Goa, India
- **Graduate Teaching Assistant** for Advanced Computer Architecture (CS G524) under Prof. Kanchan Manna
 - Teaching Assistant for Operating Systems (CS F372) and Computer Architecture (CS F341), under Prof. Biju K. Raveendran and Prof. Amalin Prince
- Undergraduate Teaching Assistant (Fall 2023)* Aug 2023 – Dec 2023 | Goa, India
- **Teaching Assistant** for Object-Oriented Programming (CS F213) under Prof. Ramprasad S. Joshi [↗](#)
 - Crafted programming lab exercises and developed supplementary reading material
- Undergraduate Teaching Assistant (Spring 2023)* Jan 2023 – Jul 2023 | Goa, India
- **Teaching Assistant** for Computer Programming (CS F111) under Prof. Swaroop Joshi [↗](#)
 - Developed an autograder to automatically evaluate 1000 students' code for programming labs and assignments

Volunteering

- HiPC - IEEE International Conference on High Performance Computing, Data, and Analytics, Student Volunteer** Dec 2023 – Dec 2023 | India