Vaibhav Bhosale

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EDUCATION

Georgia Institute of Technology — **Atlanta, United States**
Ph.D., Computer Science — *2021–2026*
Advisors: Dr. Ada Gavrilovska, Dr. Ketan Bhardwaj

Georgia Institute of Technology — **Atlanta, United States**
M.S., Computer Science — *2019–2021*

Indian Institute of Technology, Bombay — **Mumbai, India**
B.Tech. with Honors, Computer Science & Engineering — *2013–2017*

RESEARCH PAPERS

- **Asteria: Choreographing a LEO Edge to Satellite Motion**. <u>Vaibhav Bhosale</u>, Ada Gavrilovska, Ketan Bhardwaj. In Submission
- **PaddleSats: Attitude Control and Station-Keeping for Ultra-Low Density SSP Satellites**. <u>Vaibhav Bhosale</u>, Jonathan Dolan, Grishma Kalepu, Deeksha Manjunath, Gregory Durgin. In IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2023), 2023.
  Awarded Best Paper
- ***A Characterization of Route Variability in LEO Satellite Networks**. <u>Vaibhav Bhosale</u>, Ahmed Saeed, Ketan Bhardwaj, Ada Gavrilovska. In Passive and Active Measurement Conference (PAM 2023), 2023.*
  Invited presentation at IETF/IRTF Measurement and Analysis for Protocols Research Group (MAPRG)
- **Astrolabe: Modeling RTT Variability in LEO Networks**. <u>Vaibhav Bhosale</u>, Ketan Bhardwaj, Ahmed Saeed. In 1st ACM Workshop on LEO Networking and Communication (LEO-NET 2023), 2023 [Colocated with Mobicom 2023].
- **Don't Let Your LEO Edge Fade at Night**. <u>Vaibhav Bhosale</u>, Ketan Bhardwaj, Ada Gavrilovska. In 1st Workshop on Hot Topics in Systems Infrastructure (HotInfra 2023), 2023 [Colocated with ISCA 2023].
- **Toward Loosely Coupled Orchestration for the LEO Satellite Edge**. <u>Vaibhav Bhosale</u>, Ketan Bhardwaj, Ada Gavrilovska. In 3rd USENIX Workshop on Hot Topics in Edge Computing (HotEdge 2020), 2020.

PATENTS

- **Techniques for Overriding Libraries for Workloads in a Cloud-Computing Environment**. Developed at Microsoft (2021)
- **Spatial and Frequency Domain Beam Management Using Time Series Information**. Developed at Mediatek (2022)

SERVICE

- Shadow PC Member for Eurosys 2024
- Reviewer for IEEE/ACM Transactions on Networking (2023).
- Artifact Evaluation Committee OSDI 2023, ATC 2023.
- TPC Member for IEEE JSAC SI on Multi-Tier Computing for Next Generation Wireless Networks (2022)

AWARDS AND ACADEMIC ACHIEVEMENTS

- Finalist at Qualcomm Innovation Fellowship (45 out of ∼200). (2023)
- Finalist (top 5) at Microsoft One Week Hackathon in the Bengaluru Science Fair for a Speech-based Drawing Assistant (2018)
- Runners up at Mimamsa, the largest collegiate science quiz in India conducted by IISER Pune. (2016)
- Winner at Bazinga Mathematics, the biggest Mathematics quiz at IIT Bombay (80 teams participated). (2016)
- Secured **All India Rank 161** in JEE-Advanced out of 1.5 million students. (2013)
- Amongst **top 1%** in the National Standard Examinations in Physics and Astronomy. (2013)
- Awarded **National Talent Search Exam** scholarship conducted by NCERT. (2009)

PROFESSIONAL EXPERIENCE

Meditek Inc. — **San Jose**
5G Research Intern, Advanced Communication Technology, Mentor: Dr. Abhishek Roy — *May-December 2022*
- Designed **Machine Learning** techniques to perform beam management across frequency domain and spatial domain.
- Developed newer techniques to improve handover and paging capabilities for Non-Terrestrial Networks (NTNs) based 5G.

Microsoft Inc. — **Remote**
Research Intern, Azure for Operators, Mentor: Dr. Sanjeev Mehrotra — *May-August 2021*
- Developed a Kubernetes extension framework to add DPDK kernel-bypass support natively to applications.
- Achieved a **40x** reduction in latency for a UDP application without any changes to the application logic.

IBM Inc. **Remote**
Senior Backend Developer Intern, Cloud and Cognitive Services *June-August 2020*
- Designed the service orchestration stack to ensure high availability to streamline the process from development to production.
- Designed and developed a **Terraform** plug-in to enable **CRUD operations** for OpenShift clusters in a hybrid cloud environment.

Microsoft India Development Center **Bengaluru**
Software Engineer, Outlook Rest API *July 2017–August 2019*
- Drove a multi-organizational effort to reduce gaps between the public and private API contracts resulting in **20%** latency improvement, reduction of COGS, and increased agility of onboarding public APIs.
- Designed the **Asynchronous APIs** framework to deploy developers to have long running jobs ensuring optimal resource utilization.
- Planned and executed **Basic Authentication Deprecation** for Rest APIs enhancing the security of platform. Ensured **zero customer impact** by proactively reaching out to customers and educating Product & Support teams about possible issues and their mitigations.
- Lauded as one of the top performers and awarded **two leadership awards** for contributions made towards product delivery.

Microsoft India Development Center **Bengaluru**
Software Development Intern *May-July 2016*
- Developed an **Outlook** connector for **Facebook Pages** to send out facebook notifications about direct messages and posts to group mailbox in addition to daily insights (**active in production**).
- Offered a Full Time offer based on exceptional work done as intern.

TEACHING EXPERIENCE

- **Head Teaching Assistant**: Artificial Intelligence (Fall 2020, Spring 2021)
  Leading a team of 21 Graduate TAs and responsible for planning and execution of the course structure, assignments, examinations and student experience.
- **Graduate Teaching Assistant**: Distributed Computing (Fall 2023, Fall 2021), Artificial Intelligence (Fall 2019, Spring 2020)
- **Undergraduate Teaching Assistant**: Artificial Intelligence (Spring 2017), Computer Architecture (Autumn 2016), Computer Programming & Utilization (Summer 2017)

LEADERSHIP ROLES

President
School of Computer Science Graduate Student Association *2023-24*
- Led a 8-person executive team responsible for all matters concerning academics, welfare, administration, and social activities specific to graduate students, managing a budget of over $50,000

Finance Chair
School of Computer Science Graduate Student Association *2022-23*

Undergraduate Events Nominee
Students' Technical Activities Body *2016-17*
- Led a 3-tier team consisting of 20 managers and 100+ volunteers to handle 200+ events with a INR 1.5M budget for 7000+ students.

Manager
Maths & Physics Club *2015-16*