RITUL SATISH

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EXPERIENCE

- **PhD Student [🌐]** *Aug 25 - Present*
  UT Austin Austin, USA
  - I work at the intersection of **LLM agents, reasoning, and ML systems**, with a focus on making long-horizon, tool-using agents more robust, reliable, and efficient. I study agent reasoning and planning, memory and state representations, context management, inference-time behavior, and systems support for scalable agent execution. My broader goal is to develop foundational methods for **reliable and efficient agentic AI at scale**.
  - Advisor: Venkat Arun

- **Distributed Systems Research Group (INESC-ID) [🌐]** *June 24 - August 24*
  Research Intern Lisbon, Portugal
  - Designed a custom graph sampling technique to downscale microservice trace graphs.
  - Implemented the technique and conducted comparative analyses against naive approaches. Developed a benchmark leveraging the downscaled trace graphs as testbeds.
  - Extended this work into my master's thesis.
  - Advisor: Rodrigo Miragaia Rodrigues

- **AtLarge Systems Research Group [🌐]** *Dec 23 - Jun 25*
  Research Student Amsterdam, Netherlands
  - Investigating the performance of data store triggers in serverless applications.
  - Performed a comprehensive qualitative and quantitative analysis of event triggers in AWS services, including S3, DynamoDB, and Aurora. This work was published at *CCGrid '25*.
  - Advisor: Alexandru Iosup

- **Teaching Assistant**
  Vrije Universiteit, Ashoka University Amsterdam & New Delhi
  - **Performance of Network Systems** in Fall 2024, Vrije Universiteit.
  - **Computer Networks** in Spring 2024, Vrije Universiteit.
  - **Security Engineering** in Spring 2023, Ashoka University.
  - **Algorithms Design and Analysis** in Spring 2022, Ashoka University.

- **Computer Security Lab [🌐]** *June 22 - August 23*
  Research Assistant New Delhi, India
  - Worked on Automotive Hardware and software security concepts. Led a team of 6 people.
  - Built RF attack devices and conducted penetration testing on Hyundai Infotainment system and ECUs. Worked on Secure Over the Air IOT update mechanisms with TUF & Uptane.
  - Advisor: Debayan Gupta

- **Beyond Design Studio [🌐]** *Jan 21 - Mar 23*
  Co-Founder & Developer Chennai, India
  - Beyond Design Studio is a product focused creative agency which specializes in web and mobile app development, and UI/UX. Link to website here.
  - As a Business head, pitched and won targeted customers. Clientele: NITI Aayog(Indian Govt) plus a few other consumer brands.

Education

- **University of Texas at Austin** *Aug 25 - Present*
  PhD in Computer Science Austin, USA
  - GPA: 4.0*/4.0 (Until Spring 2026)

- **University of Amsterdam & Vrije Universiteit** *Aug 23 - Jun 25*
  Masters in Computer Science Amsterdam, Netherlands
  - GPA: 8.5*/10 *(Equivalent to 4.0/4.0)*
  - Track: Systems for Large Scale Applications
  - Thesis: Scale-Adjustable Benchmark for Microservice Deployments
  - Thesis Supervisors: Rodrigo Miragaia Rodrigues, Alexandru Iosup

- **Ashoka University** *Jun 2023*
  PG Diploma in Advanced Studies and Research in Computer Science New Delhi, India
  - Grade: 3.96/4 (Summa Cum Laude)
  - CS Departmental Award: Silver Medal for Academic Excellence
  - Thesis: Security Analysis of Automotive Over-the-Air (OTA) SW Update Systems
  - Thesis Supervisor: Debayan Gupta

- **Ashoka University** *Jun 2022*
  BSc (Hons) in Computer Science New Delhi, India
  - GPA: 3.43/4

Publications & Pre-prints

[1] Satish, Ritul, Prasoon Sinha, Akiho Kawada, Neeraja J. Yadwadkar (2026). **Beyond Token Savings: A Systematic Study of Context Compression in LLM Agents**. Under Submission at *the 15th International Conference on Learning Representations (ICLR 2027)*. *arXiv preprint arXiv:2609.32961*.

[2] Satish, Ritul (2025). **Mewbie: Scale Adjustable Benchmark for Microservice Deployments**. *Master's Thesis, Joint UvA–VU Master of Science in Computer Science, Vrije Universiteit Amsterdam and University of Amsterdam*.

[3] Satish, Ritul, Sacheendra Talluri, Sudarsan Sivakumar, Matthijs Jansen, Alexandru Iosup (2025). **Performance Characterization of Data Store Event Trigger Mechanisms for Serverless Computing**. *Proceedings of the 25th IEEE International Symposium on Cluster, Cloud, and Internet Computing (CCGRID 2025)*.

[4] Satish, Ritul, Alfred Daimari, Argha Chakrabarty, Kahaan Shah, and Debayan Gupta (2024). **Attacking Automotive RKE Security: How Smart are your 'Smart' Keys?**. Cryptology *ePrint* Archive, Paper 2024/1816.

[5] Satish, Ritul, Niranjan Rajesh, Argha Chakrabarty, Aditi Jain, Sristi Bafna, Arup Mondal, and Debayan Gupta (2022). **NEUROCRYPT: Coercion-Resistant Implicit Memory Authentication (Student Abstract)**. In *Proceedings of the AAAI Conference on Artificial Intelligence*, Vol. 36, No. 11, pp. 13041–13042. AAAI Press.

Skills

- **Programming Languages:** Golang, C++, C, Python, JavaScript
- **Technologies:** Docker, Kubernetes, Pytorch, SQL, Ansible, Git
- **Other:** Shell, LaTeX, Figma, Photoshop