

# Saurabh Joshi, PhD

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## Professional Experience

### • Director of R&D – Oct 2024–Present

Supra, Hyderabad, India (Remote).

- Technical Product Owner and Architect for DORA, an oracle solution from Supra
- Technical Product Owner and Architect for Supra Native Automation for Move and EVM
- Leading smart contract development efforts for AutoFi, DORA, Automation, Indices
- Leading efforts on Supra specific adaptations for Move language
- Member of multisig authority for Supra Foundation
- Design inputs for SupraLiquid/Microchain, Supra EVM
- Leading internal audit efforts for smart contracts at Supra including HyperNova, DORA, AutoFi

### • Principal Researcher – May 2022–Sep 2024

Supra, Hyderabad, India (Remote).

- Key contributor in planning technological road-map for Supra
- Application layer design, implementation and adaptation for Supra Framework in Move programming language
- Leading efforts on native blockchain automation service
- Leading and coordinating effort on novel design for blockchain oracle from conceptualization to production
- Leading a team of smart contract developers for providing oracle and VRF (Verifiable Random Function) services to various networks based on EVM, Move VM, Radix, CosmWasm
- Initiated efforts on formal specifications and verification of Move contracts
- Published a research paper as well as a US patent based on our novel oracle design
- Probabilistic analysis of oracle and moonshot protocol
- Coordinating, supervising and helping the engineering team on various aspects pertaining to oracle services, SMR, and smart contract development
- Helping in assessment and hiring

### • Staff Engineer, Product Security – Oct 2021–May 2022

Qualcomm, Hyderabad, India.

- Led and coordinated Security Validation team of 12 engineers in developing proof-of-concept exploits for reported vulnerabilities on mobile software stack
- Led and coordinated team of 3 engineers for countermeasure testing for mobile chipsets
- Developed university relations within India for Qualcomm security group
- People management of engineering team

### • Assistant Professor Grade I – May 2016–Sep 2021

Department of CSE, IIT Hyderabad, India. Tools developed: [GPURepair](#), [Open-WBO-Inc](#), [Pinaka](#), [Shesha](#), [GoProver](#), [LLVM2GOTO](#)

### • Assistant Professor (Grade I) – Sep 2015–May 2016

Department of CSE, IIT Guwahati, India.

- **Post Doctoral Research Fellow — Aug 2012–Aug 2015**  
Department of Computer Science, University of Oxford, UK. Tools developed: [cbmc-repair](#), [2LS](#), [Open-WBO](#), [Walcyrie](#)<sup>^</sup>[Approved artefact for PPOPP 2016], VerifOx
- **Research Intern — May 2010–Sep 2010, Feb 2011–Apr 2011**  
Rigorous Software Engineering group, Microsoft Research, India. Tools developed: Cbugs, AtomicInf
- **Project Trainee — Aug 2006–Jul 2007**  
Software Engineering group, IBM India Research Lab, New Delhi, India. Tools improved: SAFE

## Patents

- **“Finding Bugs with Low False Alarms and Under-specified Harness”** *Saurabh Joshi*, Shuvendu Lahiri and Akash Lal US patent number: 8793664. Patent Granted.
- **“Distributed Oracle Agreement System and Method (DORA)”**, *Saurabh Joshi*, Aniket Kate, Joshua Tobkin and David Yang, US Patent App. No: PCT/US/36923

## Research Articles

- Several peer-reviewed research articles in top-tier conferences and journals in the areas of program analysis, formal verification, constraint solving and optimization, and blockchain. For details, please refer to the Publications section on my homepage: [\[Publications\]](#)

## Skills

### Technical Skills

- **Programming Languages:** Move C++, C, Python, Rust, Solidity, Java, C#
- **Verification Framework:** CPROVER/CBMC, Boogie
- **Compilation Framework:** LLVM
- **Scripting Languages:** bash
- **Build System:** (M)ake, CMake, Cargo
- **Cloud:** Google Cloud Compute Engines
- **Documentation:** Markdown, LaTeX, Typst
- **Version Control:** git, svn
- **Development Tools:** GitHub, Eclipse, Vim, VSCode, GitHub Actions, GDB
- **Linux System Administration**
- **AI tools:** Copilot, Gemini for planning, design, development and testing

### Soft Skills

- Excellent communication skills, both written and verbal
- Strong leadership and team management skills
- Ability to work effectively in a remote and distributed team environment
- Strong problem-solving and analytical skills
- Ability to mentor and guide junior team members
- Experience in collaborating with cross-functional teams and stakeholders
- Ability to adapt to new technologies and tools quickly

## Education

- **Doctor of Philosophy**, Computer Science — Jul 2007–Feb 2013 IIT Kanpur.
  - Thesis submitted in July 2012
- **Master of Technology** (with Research Assistantship), Computer Science — July 2003–July 2006 IIT Bombay.

- **Bachelor of Engineering**, Information Technology – Sep 1999–Jul 2003 GCET, Sardar Patel University.