



Mukesh Tiwari

Education

- 2016–2020 **PhD, Computer Science**, *Australian National University*, Canberra, Australia.
2004–2009 **Integrated Post Graduate**, *Indian Institute of Information Technology & Management*, Gwalior, India.

PhD thesis

- Title *Formally Verified Verifiable Electronic Voting Scheme*
Supervisor Dirk Pattinson
Description We focussed on three main challenges posed by electronic voting: correctness, privacy, and verifiability. We addressed correctness by using a theorem prover to implement the vote counting algorithm, privacy by using homomorphic encryption, and verifiability by generating an independently checkable scrutiny sheet. Our work has been carried out in Coq theorem prover.

Experience

- 2020– **Research Fellow**, *University of Melbourne*, Melbourne, Australia.
Currently, I am working with Toby Murray on *Security Concurrent Separation Logic*. The aim is to formally reason about memory safety and information flow property of concurrent programs, written in C.
- 2013–2015 **Lecturer**, *International Institute of Information Technology*, Bhubaneswar, India.
This role was primarily geared towards teaching, and the courses I taught were *C programming* and *Cryptography*. In addition, every year I supervised two master's students in their final year project.
- 2012–2013 **Haskell Developer**, *Parallel Scientific*, Colorado, USA.
In this role, my primary job was research and prototype high performance software programs, mainly linear algebra algorithms written in Haskell.
- 2009–2012 **Technical Assistant**, *Government of India*, Kolkata, India.
I worked as a contract developer for automating the day-to-day job, including enforcing the security policies of the organisation.
- 2008–2008 **Summer Intern**, *Arcelor Mittal, Research & Development Technological Centre*, Avilés, Spain.
During this role, I worked on formalising many business requirements into a linear programming problem and wrote a custom interface that interacted with their in-house linear programming solver.

📞 +61-422059750

✉ mukesh.tiwari@unimelb.edu.au, mukesh.tiwari@anu.edu.au, mukeshtiwari.iitm@gmail.com
in [mukesh-tiwari-3609486/](https://www.linkedin.com/in/mukesh-tiwari-3609486/) • [mukesh_tiwari](https://twitter.com/mukesh_tiwari) • [mukeshtiwari](https://github.com/mukeshtiwari)

Skills

Coding Coq, Haskell, OCaml, Lean, Python, C
Language Hindi, English

Awards

HDR Fee Remission Merit Scholarship
ANU PhD Scholarship (International)
Full Scholarship to attend DeepSpec Summer School 2018, Princeton University
Travel Scholarship to attend Marktoberdorf Summer School 2019

Publications

References

- o Dirk Pattinson, Research School of Computer Science, Australian National University, Canberra, dirk.pattinson@anu.edu.au
- o Toby Murray, School of Computing and Information Systems, University of Melbourne, Melbourne, toby.murray@unimelb.edu.au
- o Thomas Haines, Department of Mathematical Sciences, Norwegian University of Science and Technology, Gløshaugen, thomas.haines@ntnu.no

📞 +61-422059750

✉ mukesh.tiwari@unimelb.edu.au, mukesh.tiwari@anu.edu.au, mukeshtiwari.iiitm@gmail.com
in [mukesh-tiwari-3609486/](https://www.linkedin.com/in/mukesh-tiwari-3609486/) • [mukesh_tiwari](https://twitter.com/mukesh_tiwari) • [mukeshtiwari](https://www.github.com/mukeshtiwari)