

# Mridul Malpotra

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**EDUCATION**      *B.Tech in Computer Science and Engineering,*      August 2012 - August 2016  
**Indraprastha Institute of Information Technology,**      *New Delhi, Delhi*  
**(IIIT Delhi)**

*Senior Secondary School,*      August 2010 - March 2012  
**Pace Junior Science College**      *Mumbai, Maharashtra*

*Secondary School,*      June 2003 - April 2010  
**Thakur Public School**      *Mumbai, Maharashtra*

**THESIS**      **Subverting Censorship in Anonymous Networks**      May 2015 - Present  
B.Tech Thesis - *under Dr. Sambuddho Chakravarty, IIIT Delhi*

- *Researching alternate ways to hide anonymous network exit traffic* (primarily Tor) for specialized services using anonymous authentication measures integrated with the Tor feature set.
- Deployed and primarily responsible for maintaining a **private Tor network in PlanetLab** for testing purposes.
  - Creation done through automated node data distribution using a Content Distribution Network.
  - Network reconfiguration and activation done for over 170 nodes distributed throughout the world.
- Study on existing anonymous authentication schemes for a remote client-server, primarily **Port Knocking** and **Single Packet Authorization (SPA)**
- Testing and statistics aggregation on existing Anonymous Authentication schemes using **Firewall knock operator (Fwknop)** on the testing Tor network.

**TECHNOLOGY SKILLS**      **Expertise Area:** Network Security, Networks, Anonymity

**Programming Languages:** C, Python, C++, Java, Bash shell script

**Tools and Technologies:** Linux, Tor, PlanetLab, Android, ns3, I2P, Metasploit, Django, Pandas, Conda, SNMP

**Technical Electives:**

- Server Administration
- Security Engineering
- Mobile Computing
- Advanced Networks
- Distributed Systems
- Applied Cryptography
- Network Security
- Secure Coding
- GPU Computing

## PROJECTS

**Subverting Censorship in Anonymous Networks** May 2015 - Present  
B.Tech Thesis - *under Dr. Sambuddho Chakravarty, IIIT Delhi*

**Security, Privacy and Trust for Internet of Things** Dec 2014 - May 2015  
Independent Study - *under Dr. Hrishikesh B. Acharya, IIIT Delhi*

- Literature survey about security, privacy and trust frameworks in an Internet and Intranet of Things.
- Major focus on the Georgia Tech Security Privacy and Trust (SPT) Framework, the Georgia Tech Trustmark Framework and Object Naming Service (ONS) concept as a medium for security in IoT.

**Non-intrusive Load Monitoring Toolkit (NILMTK)** Aug 2014 - Jan 2015  
Independent Project - *under Nipun Batra and Dr. Amarjeet Singh, IIIT Delhi*

- Part of development, testing and bug fixing team for the minimum meter data to energy monitoring toolkit.
- Integrated the ETH Zurich ECO Dataset to NILMTK accepted HDF5 data format by creating a converter based on the metadata available.
- Developed Conda and PyPi deployment binaries for NILMTK and its modules.

**Relevant links:** [nilmtkmridul.github.io](http://nilmtkmridul.github.io) and [github.com/nilmtk/nilmtk](https://github.com/nilmtk/nilmtk)

**Mousedroid - Mouse pointer on Android smartphone** Aug 2014 - Dec 2014  
Course Project - *under Dr. Vinayak Naik, IIIT Delhi*

- Created an application that connects through Bluetooth to GNU Linux distros running X servers to control the mouse pointer for presentation purposes.
- Created server utility for accepting Bluetooth connections, pointer manipulation and error correction.
- Course Project for the Mobile Computing course taken in Monsoon'14 semester.

**Relevant links:** [github.com/mridulmalpotra/mousedroid](https://github.com/mridulmalpotra/mousedroid)

**SNMP Monitoring Toolkit for server administration** Jan 2014 - May 2014  
*under Er. Navpreet Singh, IIT Kanpur and Dr. Vinayak Naik, IIIT Delhi*

- Part of an 8-student group in IIIT Delhi formed primarily to study system and network administration and contribute through projects.
- Helped in remote monitoring of servers and routers by developing a Switch/Router Multiple Interface Bandwidth Monitoring Tool in SNMP with RRDTool for GNU Linux.

**Relevant links:** [github.com/mridulmalpotra/snmp\\_monitor](https://github.com/mridulmalpotra/snmp_monitor)

## INTERNSHIPS

**Content Development Intern** May 2015 - July 2015

**CISO CyberSecurity** - *under Felix Mohan and Simmi Puri*

Responsible for content aggregation related to cybersecurity, network security and mobile operating systems to contribute to development in educational courses provided by the company.

**Backend Development Intern**

May 2014 - Aug 2014

**Rocketperks** - *under Anurag Jain and Prathamesh Paiyyer*

Worked primarily in back-end web-based application development in Django with Celery automation to develop an E-commerce portal extension to company's website.

## Academic Achievements

<b>AWARDS</b>	• INSPIRE Scholarship (May 2012) - Offered a scholarship for being in the Top 1% in State Board exams 2012 if pursuing education in pure sciences. Declined to pursue engineering.	
	• Thakur Ramnarayan Scholarship (May 2010) for coming first in 10th Board examinations in school.	
<b>POSITIONS OF RESPONSIBILITY</b>	• Secretary and member of Student Senate*	May 2015 - Present
	• Student Representative in the Undergraduate Council*	May 2015 - Present
	• Teaching Assistant for Network Administration	Jan 2015 - May 2015
	• Teaching Assistant for Basic C Refresher Module	Jan 2015 & Jan 2016
	• Teaching Assistant for Advanced C Refresher Module	Jan 2016
		<i>* Currently holding</i>

## Extra-curricular Achievements

<b>AWARDS</b>	• Won Silver in Badminton at Twaran 2k15 Sports Fest (Jan 2015), ABV IITM Gwalior.	
	• Letter of Recognition in Classical Music & Singing (July 2013) by eminent Indian Classical singer Dr. Gopa Chakrabarti.	
	• Trinity Guildhall Certificate (Dec 2008) in Grade 2 Piano and Theory of Music with Distinction.	
<b>POSITIONS OF RESPONSIBILITY</b>	• Student Mentor for 1st year students*	Aug 2014 - Present
	• Google Student Ambassador, IIIT Delhi	Aug 2014 - Jul 2015
	• Coordinator - Audio Bytes (Music Club), IIIT Delhi	Aug 2013 - May 2014
	• ACM Student Chapter Core Member, IIIT Delhi	Aug 2013 - May 2014
		<i>* Currently holding</i>
<b>COMMUNITY SERVICE</b>	• New Delhi Rising - <i>Volunteer</i>	Jan 2015 - Present
	• BloodConnect, New Delhi - <i>Donor</i>	Aug 2013 - Present
	• SNEHA, Mumbai - <i>Volunteer</i>	June 2013 - July 2013