Deep Inder Mohan

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Education

International Institute of Information Technology (IIIT)	Bangalore, India
Integrated M.Tech. Computer Science and Engineering	*2017-current*

- CGPA - 3.67/4.0
- Dean's Merit List for 2017-18, 2018-19, 2019-20, and 2020-21

Government Model Senior Secondary School, Manimajra	Chandigarh, India
Senior Secondary School, Central Board of Secondary Education (12th grade)	*2015 - 2017*

- All-India Examination Marks - 95.2%

Little Flower Convent School	Panchkula, India
High School, Indian Certificate of Secondary Education (ICSE)	*2003 - 2015*

- All-India Examination Marks - 98.4%
- 2nd position in Punjab and Haryana state

Skills

Programming Languages
- Python, C, C++, Java, MySQL

Tools and Technologies
- Libraries: OpenNMT, AllenNLP, pandas, scikit-learn
- Vim, Git, LaTeX

Major Projects

1. **Privacy Preserving Identification** (*Ongoing*): The problem statement is to create a practically deployable identification platform that delegates all computation and storage to third-party nodes. In collaboration with Prof. Srinivas Vivek as a part of the Modular Open Source Identity Platform (MOSIP).

2. **Prejudice Modelling**: Created an agent based model to simulate inter-group prejudice in society, used it to study the changes/disparities that may arise among groups over time. Research conducted in collaboration with Prof. Shrisha Rao. Paper under consideration by the Journal of Simulation. The submitted version is available here.

3. **TVLA Methodology:** Created a python implementation of the Test Vector Leakage Assessment methodology to analyse power traces from AES-128 implementations for potential DPA side-channel attacks. Work done under Prof. Srinivas Vivek. See technical report here.

4. **Interview Question Generation:** Follow-up question generation for HR interviews using OpenNMT, BERT, and ConceptNET. Research Internship project under Prof. Dinesh Babu Jayagopi. See technical report here.

5. **Unsupervised Glossary Term Extraction:** A project involving explorations into the existing techniques for extraction of glossary terms and their definitions from a document, and proposing a novel unsupervised method for doing the same. See project report here.

6. **Prolog and AI:** A project involving study of applications of logic programming languages, specifically prolog, into AI and ML. See project report and code here.

Research Experience

- Currently engaged in the MOSIP project in collaboration with Prof. Srinivas Vivek. Our objective is to create a privacy-preserving identity platform using Homomorphic Encryption *(Ongoing)*.

- Completed a semester of research under Prof. Ashish Choudhury studying Verifiable Secret Sharing in Secure Multi Party Computation and exploring the feasibility of Perfectly Secure VSS protocols in hybrid (synchronous and asynchronous) network settings *(Spring 2021)*.

- Completed a literature survey on AT-free graphs. Covered various results and theorems on AT-Free graphs and also coloring algorithms for these graphs. Final project for CS825 Graph Theory. See final report here *(Spring 2021)*.

- Completed a semester of research work under Prof. Shrisha Rao at IIIT Bangalore exploring the effects and spread of human prejudice through agent based modelling. *(Fall 2020)*

- Completed a qualitative research project under Prof. Preeti Mudliar which studies the critical factors for the employability of Indian engineering graduates in IT. See final report here. *(Fall 2020)*

- Completed a research internship under Prof. Dinesh Babu Jayagopi at IIIT Bangalore in the field of Natural Language Processing. *(Summer 2019)*

TA Experience

NPTEL course on Secure Computation *July, 2021 - October, 2021*
Prof. Ashish Choudhury

CS 302 - Introduction to Automata Theory *August 2021 - Current*
Prof. Shrisha Rao

CS 512 - Discrete Mathematics and Computability *September 2021 - Current*
Prof. Srinivas Vivek

Awards and Achievements

- **Enlisted in Dean's Merit List**, IIIT Bangalore, for 4 consecutive years (2017-18, 2018-19, 2019-20 and 2020-21).

- Co-authored an article on the privacy implications of telemedicine in India with Prof. V. Sridhar. Published in *Financial Express*.

- Winner of **Yadalam Nanjaiah Shetty Rolling Shield** (Bangalore Inter-College Debate), organised by Rotary Club of Bangalore, 2019.

- Won 2nd place at **Speak Up - Turncoat Debate** at Mood Indigo 2018 (Asia's largest cultural fest), IIT Bombay.

Positions of Responsibility

- **Ex core Member of Zense** (IIIT Bangalore Developers Club): Head of Logistics.
- **Head of DebSoc: Debate Society**, IIIT Bangalore.
- **Core Member** of organising team for **Infin8**, IIIT Bangalore's Techno-Cultural fest.
- **Hosted** *TEDx IIIT Bangalore* held in March, 2018.
- **Hosted RunBhoomi:** Run for Lake Marathon organised by ELCIA in Bangalore, 2019.
- **Head Student Volunteer** for **IEEE InDIITA Workshop** held in Bangalore, 2019.
- **Hosted** *Sangam 2020*, IIIT Bangalore's annual alumni meet.

References

Prof. Dr. Shrisha Rao   srao@iiitb.ac.in
Full Professor

Dr. Srinivas Vivek   srinivas.vivek@iiitb.ac.in
Assistant Professor

Prof. Dr. V. Sridhar   vsridhar@iiitb.ac.in
Full Professor