Sakshi Udeshi

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11 Simei Street 4,
Singapore, 529866

EDUCATION

Singapore University of Technology and Design
Doctor of Philosophy   *Sept 2017 - Ongoing*
Computer Science
Advisor: Dr Sudipta Chattopadhyay

Birla Institute of Technology and Science, Pilani
M.Sc. (Tech.)   *Aug 2012 - May 2016*
Information Systems

EXPERIENCE

Singapore University of Technology and Design   *Sept 2017 - Ongoing*
PhD Candidate;

- Conducted research in the domains of ML fairness, Natural Language Processing and ML security
- Teaching Assistant for undergraduate Algorithms and Software Engineering courses

@WalmartLabs   *Aug 2016 - June 2017*
Software Engineer;

Housing.com   *Jul 2015 - Dec 2015*
Software Development Intern;

RESEARCH PROJECTS

Machine Learning Fairness
Developed Aequitas, a tool to discover, estimate and fix individual fairness violations in arbitrary machine learning models

Grammar Based NLP Testing
Worked on OGMA, a directed, grammar-based approach to systematically find violations in the input space for natural language processing systems

Backdoor Attack Detection
Developed a completely black box methodology to detect backdoor attacks in image classification machine learning models

PUBLICATIONS

1. **Udeshi, S.**, Arora, P., & Chattopadhyay, S. (2018, September). Automated directed fairness testing. In *Proceedings of the 33rd ACM/IEEE International Conference on Automated Software Engineering (pp. 98-108).* ACM.
https://github.com/sakshiudeshi/Aequitas

2. **Udeshi, S.**, & Chattopadhyay, S. (2019). Grammar Based Directed Testing of Machine Learning Systems. *arXiv preprint arXiv:1902.10027.*
Accepted subject to minor revisions at IEEE Transactions of Software Engineering
https://github.com/sakshiudeshi/Ogma

3. **Udeshi, S.**, Shanshan, P., Woo, G., Loh, L., Rawshan, L., & Chattopadhyay, S. (2019). Model agnostic defence against backdoor attacks in machine learning. *arXiv preprint arXiv:1908.02203.*
Under Review
https://github.com/sakshiudeshi/Neo

HONOURS

SUTD President's Graduate Fellowship