





# Sailik Sengupta

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Google Scholar   
Linkedin   
Website   
Github 

## Languages

English, Bengali, Hindi

## Programming

Python (Java, C++)  
Pytorch, MxNET  
Latex (HTML, JS)  
Gurobi, Pulp

## Skills

Large Language Models  
Game-theoretic Models  
Robust Optimization  
Automated Planning  
Network Security  
Multilingual NLP  
Deep Learning

## Education

2015 – 2020 » **Ph.D.** in Computer Science  
Arizona State University, USA

2009 – 2013 » **B.E.** Computer Science & Engineering  
Jadavpur University, India


## Professional Experience

2021 – » **amazon Science** Senior Scientist  
Building multilingual and secure LLMs capable of orchestration.


2018 – 2020 » **IBM** PhD Fellowship  
Automated dynamic defences for cloud security.

2018 & 2019 » **amazon Science** Scientist Intern  
Teaching language models constraint adherence with RL.

2015 - 2018 » **Arizona State University** Research/Teaching Assistant, Instructor, Lecturer  
Optimization, Game Theory, Machine Learning, and Cybersecurity

2013 - 2015 » **amazon** Software Development Engineer (& Security Certifier)  
External payments launch team; built .amazon.com

## Selected Awards

- ➔ [2018-2020] IBM Ph.D. Fellowship 
- ➔ [2019] Top 3 Intern Research Projects, Amazon Research
- ➔ [2016-2020] Graduate Research Fellowship, School of Computing and AI (SCAI), ASU
- ➔ [2015] Developer of the Year, External Payment Systems, Amazon
- ➔ [2013] Top 3 in Computer Science and Engineering, Jadavpur University
- ➔ [2008-2009] National Olympiad candidate in Physics, Chemistry and Mathematics

## Service

- ➔ Reviewer for NeurIPS, ICML, ICLR, EMNLP, EACL, AAAI, IJCAI, ICNC, AAMAS, ICRA, and IEEE Journals (L-CSS, IFS, Network Security, Communications S & T).
- ➔ Review Process Committee and web-developer, IJCAI 2017.
- ➔ Coding event organizer, SRIJAN'13 Jadavpur University Tech Fest.

## Peer-reviewed Publications

Refer to my website / google scholar for pre-prints.

- NAACL'24 **FLAP: Flow-Adhering Planning with Constrained Decoding in LLMs**  
S. Roy, S. Sengupta, D. Bonadiman, S. Mansour, A. Gupta
- AAAI'24 **'Why didn't you allocate this task to them?' Negotiation-Aware Explainable Task Allocation and Contrastive Explanation Generation**  
Z. Zahedi, S. Sengupta, S. Kambhampati
- EMNLP'23 **Measuring and Mitigating Constraint Violations of In-Context Learning for Utterance-to-API Semantic Parsing**  
S. Wang, S. Jean, S. Sengupta, J. Gung, N. Pappas, Y. Zhang
- EACL'23 **Robustification of Multilingual Language Models to Real-world Noise with Robust Contrastive Pretraining**  
A. C. Stickland\*, S. Sengupta\*, J. Krone, S. Mansour, H. He
- AIJ'22 **Imperfect ImaGANation: Implications of GANs Exacerbating Biases in Facial Data Augmentation and Snapchapp Selfie Lense**  
N. Jain, A. Olmo, S. Sengupta, L. Manikonda, S. Kambhampati
- NeurIPS'22 (W) **Parameter and Data Efficient Continual Pre-training for Robustness to Dialectal Variance in Arabic**  
S. Sarkar, K. Lin, S. Sengupta, L. Lausen, S. Zha, S. Mansour
- ICAPS'22 **RADAR-X: An Interactive Mixed Initiative Planning Interface Pairing Contrastive Explanations and Revised Plan Suggestions**  
K. Valmeekam, S. Sreedharan, S. Sengupta, S. Kambhampati
- EMNLP'21 (W) **On the Robustness of Intent Classification and Slot Labeling in Goal-oriented Dialog Systems to Real-world Noise**  
S. Sengupta\*, J. Krone\*, S. Mansour
- HICSS'21 **Software Deception Steering through Version Emulation**  
F. Araujo, S. Sengupta, J. Jang, A. Doupé, K. Hamlen, S. Kambhampati
- NeurIPS'20 (W) **Multi-agent Reinforcement Learning in Bayesian Stackelberg Markov Games for Adaptive Moving Target Defense**  
S. Sengupta, S. Kambhampati
- GameSec'20 **Moving Target Defense for Robust Fingerprinting of Electric Grid Transformers in Adversarial Environments**  
S. Sengupta, K. Basu, A. Sen, S. Kambhampati
- ICML' 20 (W) **Not all Failure Modes are Created Equal: Training Deep Neural Networks for Explicable (Mis)Classification**  
A. Olmo\*, S. Sengupta\*, S. Kambhampati
- IEEE Com S&T'20 **A Survey of Moving Target Defenses for Network Security**  
S. Sengupta\*, A. Chowdhary\*, A. Sabur, D. Huang, A. Alshamrani and S. Kambhampati

- HCI Journal'20 **RADAR: Automated Task Planning for Proactive Decision Support**  
S. Grover, S. Sengupta, T. Chakraborti, A. P. Mishra and S. Kambhampati
- ML-Hat'20 **DAPT 2020-- Constructing a Benchmark Dataset for Advanced Persistent Threats**  
S. Myneni\*, A. Chowdhary\*, A. Sabur, S. Sengupta, G. Agrawal, D. Huang and M. Kang
- WeCNLP'19 **Text Generation with Keyword Constraints-- a Hybrid Approach Using Supervised and Reinforcement Learning**  
S. Sengupta, H. He, B. Haider, S. Gella, M. Diab
- GameSec'19 **MTDeep: Moving Target Defense to Boost the Security of Deep Neural Nets Against Adversarial Attacks**  
S. Sengupta, T. Chakraborti, S. Kambhampati
- GameSec'19 **General Sum Markov Games for Strategic Detection of Advanced Persistent Threats using Moving Target Defense in Cloud Networks**  
S. Sengupta, A. Chowdhary, D. Huang, S. Kambhampati
- AAAI'19 (W) **Markov Game Modeling of Moving Target Defense for Strategic Detection of Threats in Cloud Networks**  
S. Sengupta\*, A. Chowdhary\*, D. Huang, S. Kambhampati
- Trust'19 **To Monitor or to Trust: Observing Robot's Behavior based on a Game-Theoretic Model of Trust**  
S. Sengupta\*, Z. Zahedi\*, S. Kambhampati
- ICNC'19 **Adaptive MTD Security using Markov Game Modeling**  
A. Chowdhary, S. Sengupta, A. Alshamrani, A. Sabur, D. Huang
- NDM'19 **iPass: A Case Study of the Effectiveness of Automated Planning for Decision Support**  
S. Grover, S. Sengupta, T. Chakraborti, A. Mishra, S. Kambhampati
- NDM'19 **CAP: A Decision Support System for Crew Scheduling using Automated Planning**  
A. Mishra, S. Sengupta, S. Sreedharan, T. Chakraborti, S. Kambhampati
- GameSec'18 **Moving Target Defense for the Placement of Intrusion Detection Systems in the Cloud**  
S. Sengupta, A. Chowdhary, D. Huang, S. Kambhampati
- AAAI'18 (W) **An Investigation of Bounded Misclassification for Operational Security of Deep Neural Networks**  
S. Sengupta, A. Dudley, T. Chakraborti and S. Kambhampati
- WeCNLP'18 **Decomposable Intents in Goal-Directed Conversations: Dataset and Challenges for End-to-End Learning**  
S. Sengupta, R. Gangadharaiah, A. Mishra, M. Diab
- ICAPS'18 **MA-RADAR - A Mixed-Reality Interface for Collaborative Decision Making**  
S. Sengupta\*, T. Chakraborti\* and S. Kambhampati

- AAAI'17 **RADAR - A Proactive Decision Support System for Human-in-the-Loop Planning**  
S. Sengupta, T. Chakraborti, S. Sreedharan, S. G. Vadlamudi and S. Kambhampati
- AAMAS'17 **A Game Theoretic Approach in Strategy Generation for Moving Target Defense with Switching Costs**  
S. Sengupta, S. G. Vadlamudi, S. Kambhampati, M. Taguinod, Z. Zhao, A. Doupe and G. Ahn
- AAMAS'17 **Moving Target Defense- A Symbiotic Framework for Artificial Intelligence and Security**  
S. Sengupta
- SoCS'16 **Compliant Conditions for Polynomial Time Approximation of Operator Counts**  
T. Chakraborti, S. Sreedharan, S. Sengupta, T.K. Satish Kumar and S. Kambhampati
- AAMAS'16 **Moving Target Defense For Web Applications Using Bayesian Stackelberg Games**  
S. G. Vadlamudi, S. Sengupta, S. Kambhampati, M. Taguinod, Z. Zhao, A. Doupe and G. Ahn
- ReTIS'11 **An improved fuzzy clustering method using modified Fukuyama Sugeno cluster validity index**  
S. Sengupta, S. De, A. Konar and R. Janarthanan