

# Sheel Dey

## Education

2019–present **Ph.D. in Computer Science**, *Texas A&M University*.

Advisor: Dr. Guni Sharon

Research Interests: Reinforcement Learning, AI Safety, Robotics

2016–2019 **M.S. in Computer Science**, *Texas A&M University*.

Advisor: Dr. Atlas Wang

Thesis: “Automatic Whole-Brain Mapper for Localization and Registration”

2011–2015 **B.Tech in Electronics Engineering**, *National Institute of Technology Trichy*.

## Publications

Conference Proceedings

ITSC 2019 **Vision Based Localization for Infrastructure Enabled Autonomy**.

D. Ravipati, K. Chour, A. Nayak, T. Marr, S. Dey, A. Gautam, S. Rathinam, & G. Swaminathan

Book Chapters

Springer 2019 **FreeStyle: A Sketch-Based Wireframing Tool**.

S. Narendra, S. Dey, J. Coad, S. Polsley & T. Hammond

Book Title: “Inspiring Students with Digital Ink: Impact of Pen and Touch on Education”

Editors: T. Hammond, M. Prasad, & A. Stepanova

## Preprints

2020 **A Joint Imitation-Reinforcement Learning Framework for Reduced Baseline Regret**.

S. Dey, S. Pendurkar, G. Sharon, & J. Hanna

*Under review at ICRA 2021*

## Research Experience

2019–present **Graduate Research Assistant**, *Pi Star lab*.

Advisors: Dr. Guni Sharon & Dr. Josiah Hanna

Researching safe-reinforcement learning for real-world autonomous agents.

🔗 <http://github.com/pi-star-lab/JIRL>

Spring 2019 **Research Assistant**, *Wang lab*.

Advisors: Dr. Atlas Wang & Dr. Jun Wang

Developed an application for automated neuron counting in rodent brain images.

🔗 <http://github.com/sheelabhadra/Brain-Atlas-Project>

2017–2018 **Research Assistant**, *Autonomous Systems lab*.

Advisor: Dr. Sivakumar Rathinam

Implemented algorithms for real-time detection of emergency vehicle sirens around a self-driving car.

🔗 <http://github.com/sheelabhadra/Emergency-Vehicle-Detection>

Summer 2014 **Research Intern**, *Indian Institute of Technology Delhi*.






Advisor: Dr. Arun Kumar

Implemented orientation estimation algorithms for optical image stabilization.

## Industry Experience

- Fall 2018 **BNSF Railway**, *Machine Learning Engineer Intern*.  
Mentor: Dr. Aritra Pal  
Developed time-series and regression models to predict the time to failure of railway track geometry.
- 2015–2016 **Maruti Suzuki India Limited**, *Graduate Engineer Trainee*.  
Led automation projects such as installation of short circuit detectors and human machine interfaces.

## Selected Projects

- 2020 **Learning to Drive in CARLA**.  
Trained an autonomous car to drive around a track using reinforcement learning in the CARLA simulator.  
 <http://github.com/sheelabhadra/learning2drive>
- 2020 **Is My Flight Delayed?**, *1st place*, TAMIDS Data Science competition.  
Trained tree-based models on U.S. airline delay data using the route, carrier, day and time of departure, flight occupancy, and historical delays as features to predict delays ahead of time.  
 <http://github.com/sheelabhadra/pi-star-skyblazers-dsc-2020>
- 2019 **Reviving the Metro Bike Share in Los Angeles**, *1st place*, TAMIDS Data Science competition.  
Developed tree-based models with bike docking station density, population, income, and comments from people as features to suggest 15 locations for new bike docking stations in Los Angeles.  
 <http://github.com/sheelabhadra/superficial-intelligence>
- 2017 **FAKER: Amazon Online Fake Reviews Detection**.  
Implemented a self-organizing map to identify fake online reviewers based on the content and frequency of their reviews.  
 <https://youtu.be/APsi2uEfr4I>
- 2017 **Unmanned Surface Vehicle Tracker**.  
Devised an algorithm to minimize pitch and yaw adjustments to a drone-camera while tracking a USV.  
 <https://youtu.be/Sga9rA3U0rgr>

## Skills

Programming	Python, C++, Java, MATLAB
Frameworks	TensorFlow, PyTorch, OpenCV
Tools	Git, Bash, Flask, Docker, L <sup>A</sup> T <sub>E</sub> X

## Awards & Achievements

- 2020 **Virtual Grace Hopper Celebration scholarship** recipient
- 2020 **1st place in Grad division**, 2020 TAMIDS Data Science Competition
- 2019 **1st place in Grad division**, 2019 TAMIDS Data Science Competition
- 2017 **Dept. of CSE Travel Grant**, CPTTE 2017, Chicago

## Professional Service

- 2020 **ICRA**, *Reviewer*.
- 2020 **Model Interpretability**, *Guest Speaker*, TAMU Datathon Summer Bootcamp.

## Teaching

- Fall 2020 **CSCE 625 – Introduction to Artificial Intelligence**, *Teaching Assistant*, TAMU.
- Spring 2017 **CSCE 222 – Discrete Structures for Computing**, *Student Assistant*, TAMU.
- Fall 2016 **CSCE 311 – Programming Languages**, *Student Assistant*, TAMU.