

Varshil Gandhi

DATA & APPLIED SCIENTIST, MICROSOFT · IIT GUWAHATI

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Education

Indian Institute of Technology, Guwahati , B.Tech Major in Electronics & Electrical Engineering and Minor in Computer Science	CGPA : 9.23/10	2016 - 2020	<i>Guwahati, India</i>
Navrachana Vidhyani Vidhyalaya , Senior Secondary	Percentile : 99.97%	2014 - 2016	<i>Vadodara, India</i>

Experience

Microsoft *Bengaluru, India*
DATA & APPLIED SCIENTIST *Aug. 2020 - Ongoing*

- Improving the performance of current transformer based NLP models for filtering irrelevant ads with respect to a query

Research Internship, RISE Lab - IIT Madras *Chennai, India*
MENTOR: PROF. BALARAMAN RAVINDRAN, PROFESSOR AT IIT MADRAS & HEAD, RBC DSAI *May 2019 - Jul. 2019*

- Examined how introducing **graph-based structural biases** can help imitation learning models reason about the relations between the objects present in the view of a self-driving car
- Studied the effects of relational models in transfer learning from simulation datasets to real world driving datasets (**Sim-2-Real**)

Distant Research Work, MILA *Montreal, Canada*
MENTOR: DR. JIE FU, POSTDOC AT QUEBEC AI INSTITUTE (MILA) *Mar. 2019 - Jul. 2019*

- Analyzed the effects of improving language modelling in **Text-Based Parser Games** using current advances in transformer based models

Research Internship, Intel Labs *Bengaluru, India*
MENTOR: DR. VENKAT NATARAJAN, SENIOR STAFF ENGINEER *May. 2018 - Jul. 2018*

- Explored the domain of **Reinforcement learning & Imitation Learning** for plausible innovations towards intelligent learning of robotic systems as collaborative multi-agents
- Designed variants of **Generative Adversarial Imitation Learning (GAIL)** algorithm that can learn robotic arm maneuvers given expert trajectories

Projects

Exploring Learned Representations for Speech-based Applications *IIT Guwahati*
BACHELOR THESIS PROJECT | MENTOR: PROF. ROHIT SINHA *Jul. 2019 - Jul. 2020*

- Showed performance enhancement in acoustic models using **trainable feature extraction methods** over traditional log mel filter-banks, thus allowing for pre-training with excessive amount of unlabeled data
- Extended the idea of trainable feature representations to design an **unified multilingual acoustic model** with minimal decrease in WER scores

Robotic Human Palm Replication *IIT Guwahati*
DESIGN LAB PROJECT | 6 MEMBER TEAM | 📄 GITHUB *Jan. 2019 - May 2019*

- Developed a camera based framework that helps the robotic palm to replicate the motion of human fingers using **Hand Pose Estimation** techniques and deep learning models
- Integrated state-of-the-art pose estimation models & designed mathematical formulations for mapping skeleton data-points to angular outputs

Automated Robot For Library Enhancement *Robotics Club, IITG*
4I LABS, IIT GUWAHATI | 6 MEMBER TEAM | 📄 GITHUB *Jul. 2017 - Apr. 2019*

- Automated the work required to arrange the books in the library shelves through a movable wheeled robot in human intervened environment
- Worked upon **SLAM, Indoor navigation, Design and 3D modeling** of a robot

Skills

Programming	Python, C/C++, Matlab, Bash Scripting*
Tools/Frameworks/IDE	Tensorflow, Pytorch, Scikit Learn, Git, OpenAI Gym, Numpy, Matplotlib, ROS*
Miscellaneous	Arduino, Raspberry Pi, Gazebo*
Operating Systems	Linux, Windows, Raspian*

Awards

2018	Bronze Medal , Safety Device for Shipping vessels, InterIIT Tech Meet	<i>Chennai, India</i>
2016	AIR 701, Secured Research Fellowship , KVPY 2015-16	<i>Mumbai, India</i>
2014-16	State Rank 7 , GSEB Board Exams	<i>Vadodara, India</i>
2012	Silver Medalist , IRIS National Science Fair by Intel, CII and DST, India	<i>Delhi, India</i>

Positions of Responsibility

Apr. 2018 - Apr. 2019	Technical Project Manager , Robotics Club, IIT Guwahati	<i>Guwahati, India</i>
Jan. 2020 - Apr. 2020	Project Mentor , IITG.ai	<i>Guwahati, India</i>
Jan. 2020 - Mar. 2020	Lecturer @ AI Lecture Series , Robotics Club, IITG	<i>Guwahati, India</i>