Zeel B Patel

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Nationality: Indian
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Education

PhD in Computer Science, *Jan 2020 - Present*
IIT Gandhinagar, Gujarat, India
Advisor: Nipun Batra
CGPA: 9.59/10.0

M.Tech. in Mechanical Engineering (Specialization: Smart Manufacturing), *Aug 2017 - May 2019*
IIITDM Kancheepuram, Chennai, India
CGPA: 9.17/10.0

Publications (Google Scholar profile)

Selected Peer-reviewed articles

1. **Zeel B Patel**, Palak Purohit, Harsh Patel, Shivam Sahni, Nipun Batra
   Accurate and Scalable Gaussian Processes for Fine-grained Air Quality Inference
   To appear: AAAI 2022 (CORE A*)
   GitHub repo: https://github.com/patel-zeel/AAAI22
2. Rishiraj Adhikary, **Zeel B Patel**, Tanmay Srivasatava, Nipun Batra, Mayank Singh, Udit Bhatia
   Vartalaap: What Drives #AirQuality Discussions: Politics, Pollution or Pseudo-science?
   CSCW 2021 (CORE A)
   GitHub repo: https://github.com/rishi-a/Vartalaap

Posters and Workshop papers

1. **Zeel B Patel**, Nipun Batra
   Towards Active Air Quality Station Deployment
   SubSetML Workshop, ICML 2021 (CORE A*)
2. **Zeel B Patel***, S Deepak Narayanan*, Apoorv Agnihotri, Nipun Batra
   Poster: A toolkit for spatial interpolation and sensor placement
   ACM SenSys 2020 (CORE A*)
   GitHub repo: https://github.com/sustainability-lab/polire
3. **Zeel B Patel**, Nipun Batra
   Active Learning: A Visual Tour
   3rd Workshop on Visualization for AI Explainability, IEEE VIS 2020 (CORE A)
   Web link: https://patel-zeel.github.io/active-learning-visualization/

Under review

1. Karm Patel, Rishiraj Adhikary, **Zeel B Patel**, Nipun Batra
   Samachar: News Media on Air Pollution in India
   COMPASS 2022

Under submission

1. Palak Purohit, **Zeel B Patel**, Nipun Batra
   Re: Stochastic Gradient Descent in Correlated Settings: A Study on Gaussian Processes
   ReScience Journal
2. **Zeel B Patel**, Deepak Narayanan, Apoorv Agnihotri, Nipun Batra
   Re: Comparison of spatial inter-polation methods for the estimation of air quality data
   ReScience Journal

Last updated: Thursday 9th December, 2021

3. **Zeel B Patel**, Nipun Batra
   Re: high-resolutiondaily gridded meteorological dataset for serbia made by random forestspatial interpolation
   ReScience Journal

Major Pull Requests

Stheno: https://github.com/wesselb/stheno

- Added a sparse Gaussian process method called FITC[1]
  https://github.com/wesselb/stheno/pull/17

Scikit-learn: https://github.com/scikit-learn/scikit-learn

- Accelerated a slow example in scikit-learn
  https://github.com/scikit-learn/scikit-learn/pull/21673

PyMC: https://github.com/pymc-devs/pymc

- Added a few distribution moments to pymc
  https://github.com/pymc-devs/pymc/pull/5173
  https://github.com/pymc-devs/pymc/pull/5154
- Corrected formula (added missing log)
  https://github.com/pymc-devs/pymc-examples/pull/64

GPyTorch:https://github.com/cornellius-gp/gpytorch

- Added Type hints and exceptions in kernels
  https://github.com/cornellius-gp/gpytorch/pull/1802
- Corrected order of subtraction in SGPR added loss
  https://github.com/cornellius-gp/gpytorch/pull/1793

Online Books

Explain-ML: https://explain-ml.github.io/explain-ml-book/intro.html
This book is an effort to explain complex ML concepts with interactive codes and visualizations

Awards

Registration grants

ICML 2021
IEEE VIS 2020

Helped advisor with

Google Compute grant 2021 ($ 5000 credits in Google Cloud Platform)

Industrial Experience

Data Scientist in R&D team *Jun 2019 - Dec 2019*
Inspirisys Solutions Ltd., Chennai, India

Teaching Experience

Guest lectures

Introduction to Bayesian Machine Learning
Machine Learning, IIT Gandhinagar *Spring 2021*

Introduction to Active Learning
Ubuqutous computing, IIT Gandhinagar *Fall 2021*

[1] Edward Snelson and Zoubin Ghahramani. Sparse gaussian processes using pseudo-inputs. In Y. Weiss, B. Schölkopf, and J. Platt,editors,Advances in Neural Information Processing Systems, volume 18. MIT Press, 2006

Service

Reviewer

- ACM COMPASS Posters and Demos *2021*